

FIG. 1

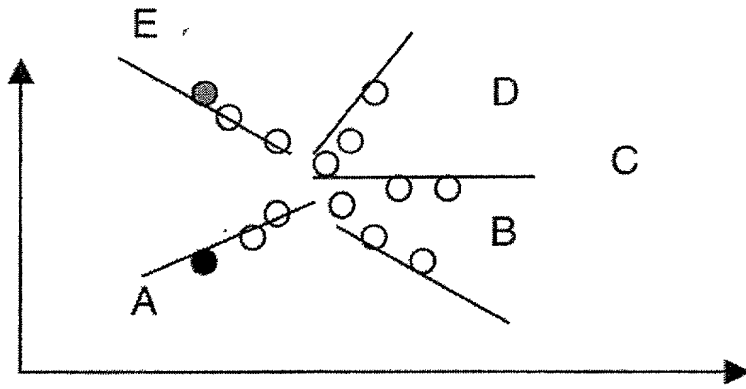


FIG. 2

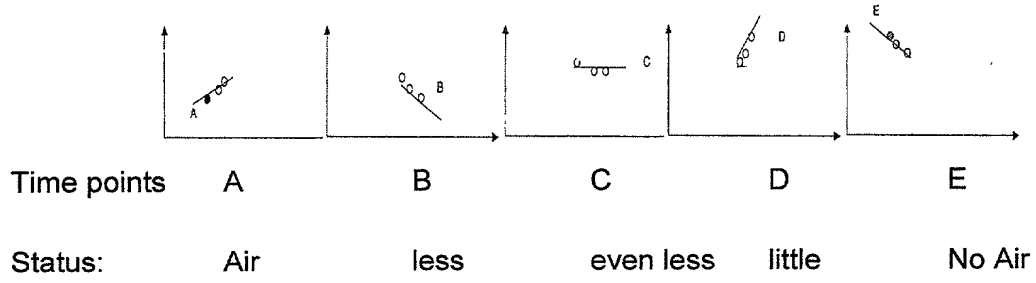


FIG 3

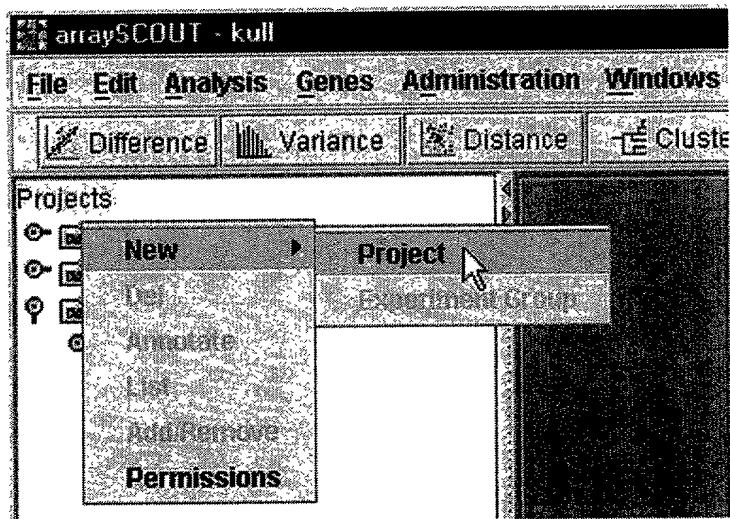


Fig. 6

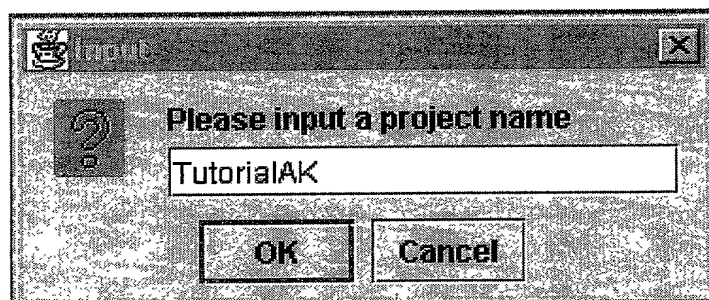


Fig. 7

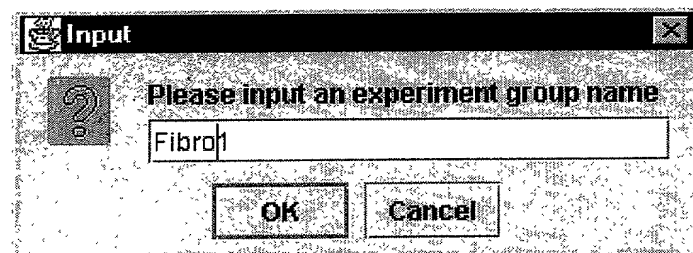


Fig. 8

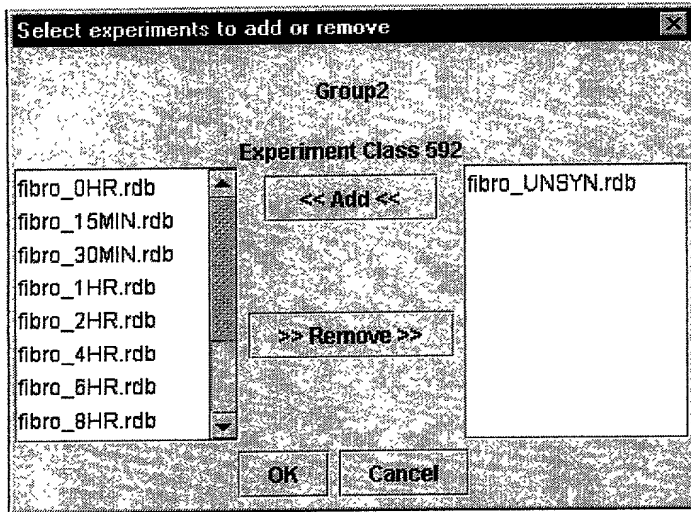


Fig. 9

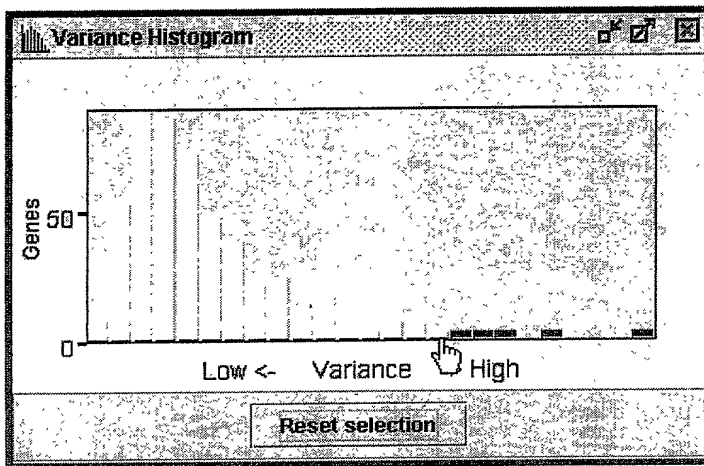


Fig. 10

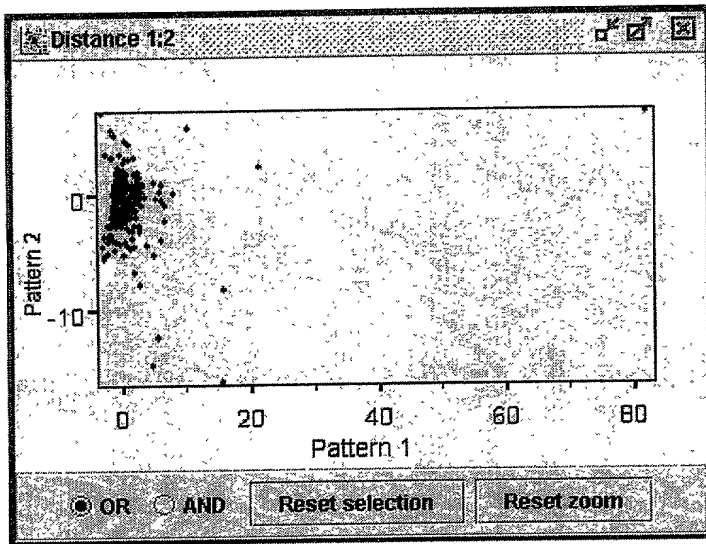


Fig. 11

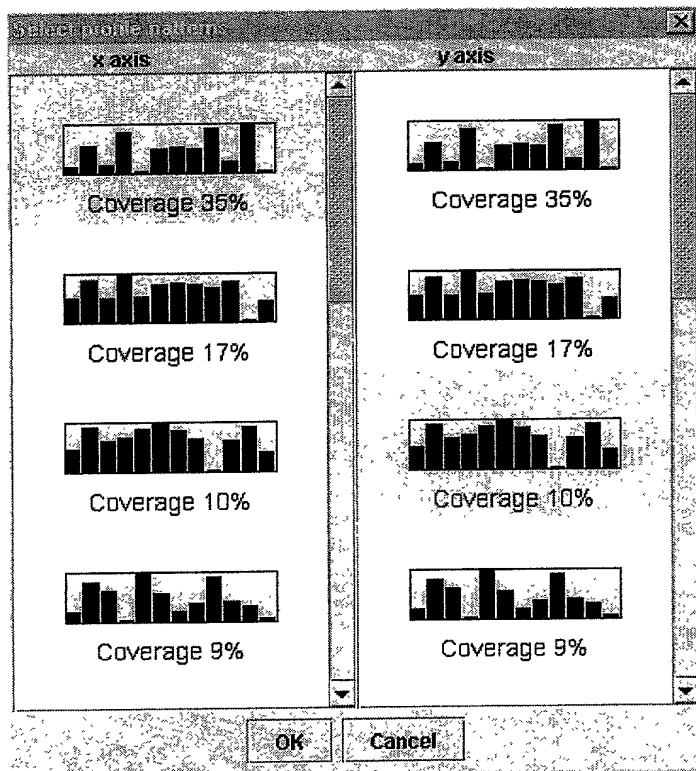


Fig. 12

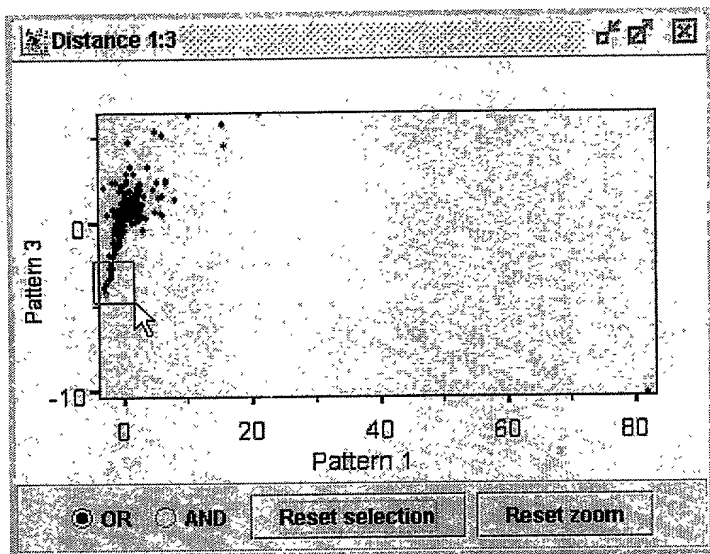


Fig. 13

Gene	Description	Selected in
W72758	zd71h04 s1 Soares fetal heart NbH-H19W Homo sapie	<input type="checkbox"/>
R40826	y72g12 s1 Homo sapiens cDNA clone 28051 3'	<input type="checkbox"/>
A4001918	zh83b05.s1 Soares fetal liver spleen 1NFL6 B1 Homo	<input type="checkbox"/>
R43729	yp20c12 s1 Homo sapiens cDNA clone 32811 3'	<input type="checkbox"/>
A4041370	z09a02 s1 Soares fetal heart NbH-H19W Homo sapie	<input type="checkbox"/>
T25837	ye42c02 s1 Homo sapiens cDNA clone 120386 3'	<input type="checkbox"/>
E27557	y81g03 s1 Homo sapiens cDNA clone 182772 3' siml	<input type="checkbox"/>
A4024572	ze7ch08 s1 Soares fetal heart NbH-H19W Homo sapie	<input type="checkbox"/>

Fig. 14

SRS

Simple mode Submit Deselect

expert query

Q1

- Metabolic Pathways
- TransFac
- SeqRelated
- Sequence
 - ☐ EMBL
 - ☐ GENBANKNEW
 - ☐ PIR
 - ☐ TREMBLNEW
 - ☐ TREMBL
 - ☐ NACENESEQ
 - ☐ EMBLNEW
 - ☐ SWISSPROT
 - ☐ SPTREMBL
 - ☐ GENPEPT
 - ☐ SPTREMBLNE

Fig. 15

Q1

ys

EW

W

D

☐ EMBLNEW
 ☐ GENBANK
 ☐ SWISSPROT
 ☐ SWISSNEW
 ☐ SPTREMBL
 ☐ REMTREMBL
 ☐ GENPEPT
 ☐ GENPEPTNEW
 ☐ SPTREMBLNEW
 ☐ AAGENESEQ

Description

cyclin

Fig. 16

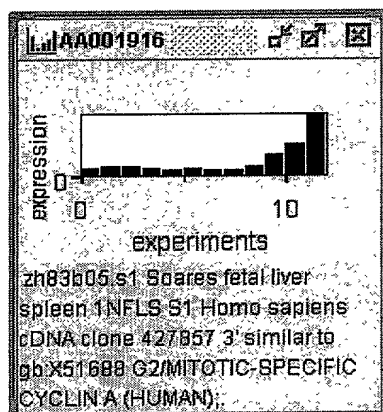


Fig. 17

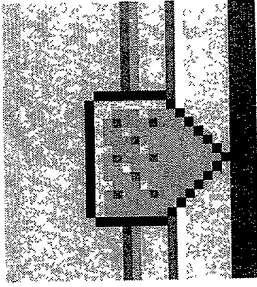


Fig. 18

Scale Tab

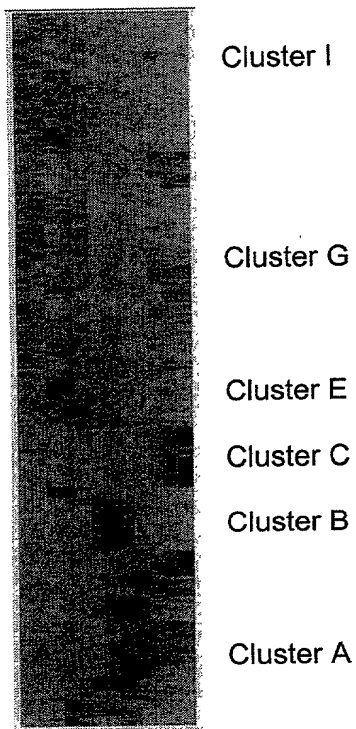


Fig. 19

Projects





-  Bertrand
-  fibroblast data
-  Fibroblast Project
-  Illico Presto

Fig. 20







-  Experiment group 1
 -  experiment 0 min
 -  experiment 15 min
 -  experiment 30 min
 -  experiment 1 h
 -  experiment 2h

Fig. 21

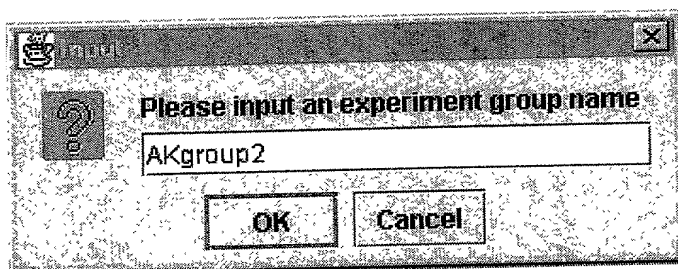


Fig. 22

Experiment group name dialog box.

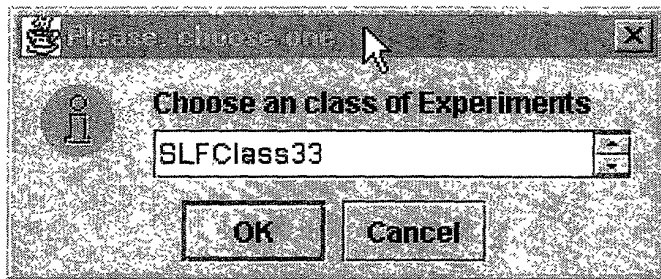


Fig. 23

Choose experiment class dialog box.

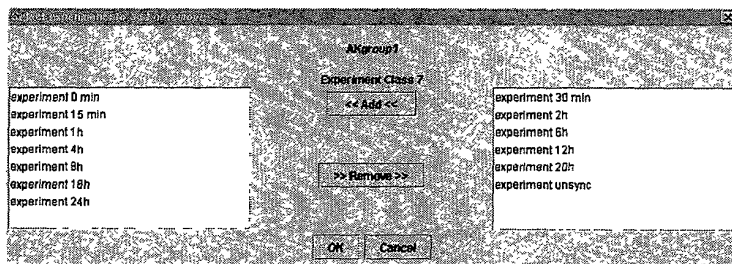


Fig. 24

Add/Remove dialog box for adding and removing experiments from experiment groups.

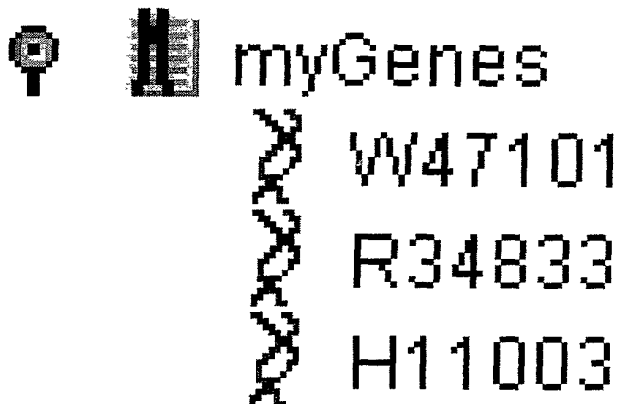


Fig. 25

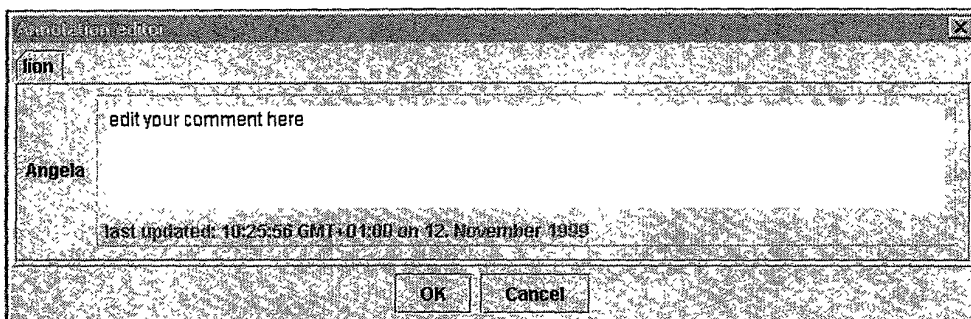


Fig. 26

The annotation editor.

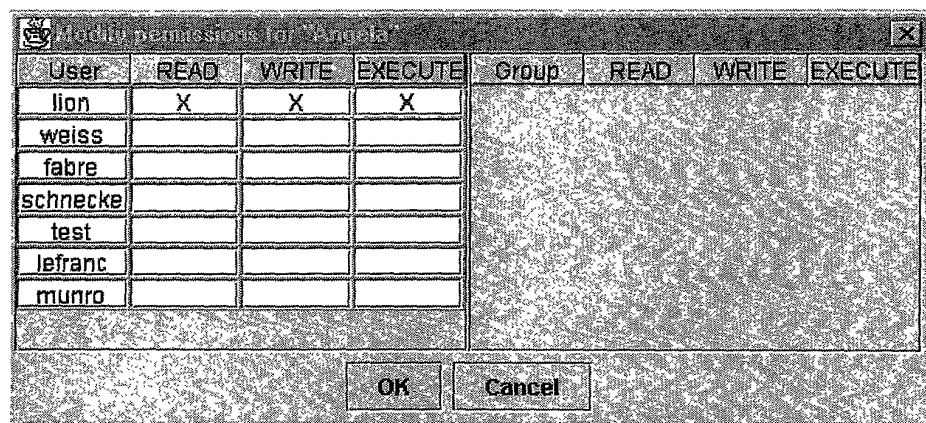


Fig. 27

The permissions dialog box for project "Angela".

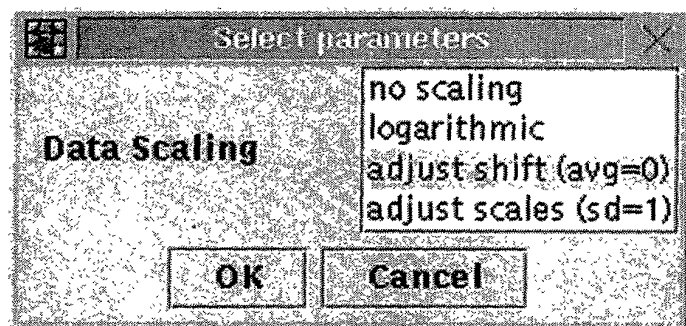


Fig. 28

Select parameters "Data Scaling" dialog box.

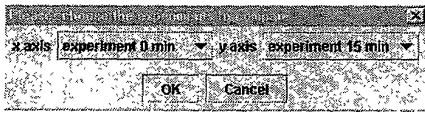


Fig. 29

The Choose experiments dialog box.

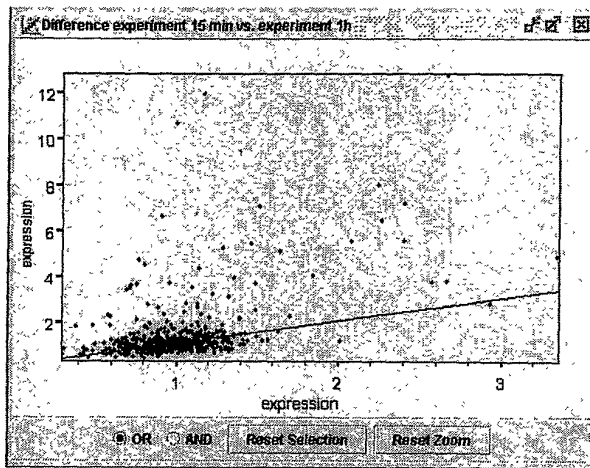


Figure 30

An example difference plot.

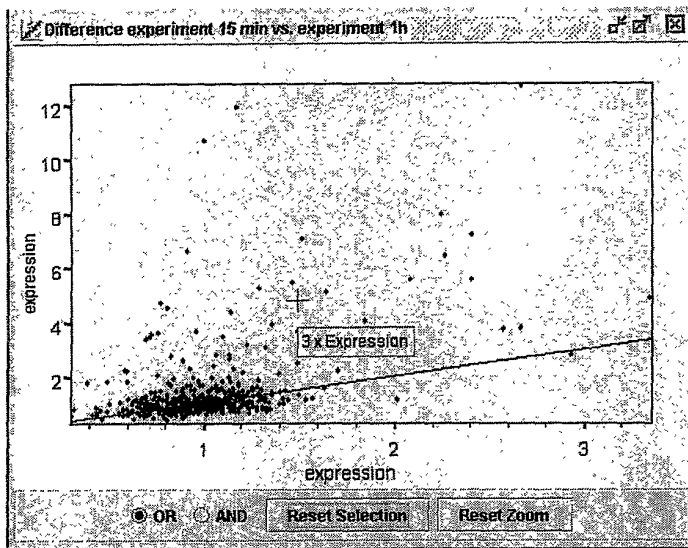


Fig. 31

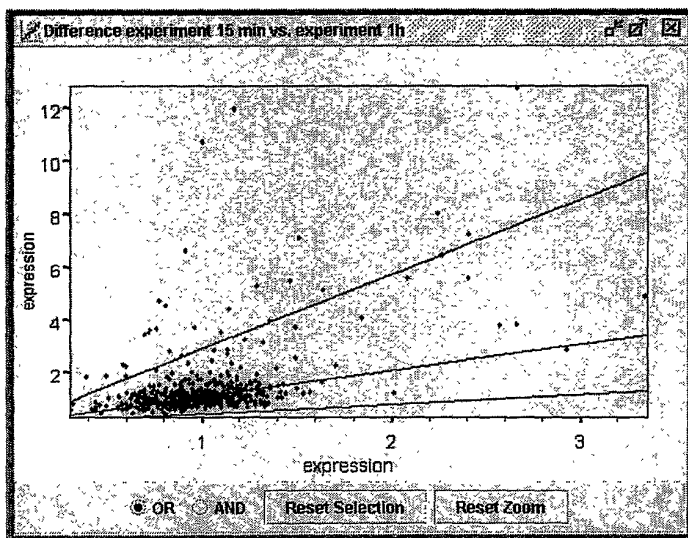


Fig. 32

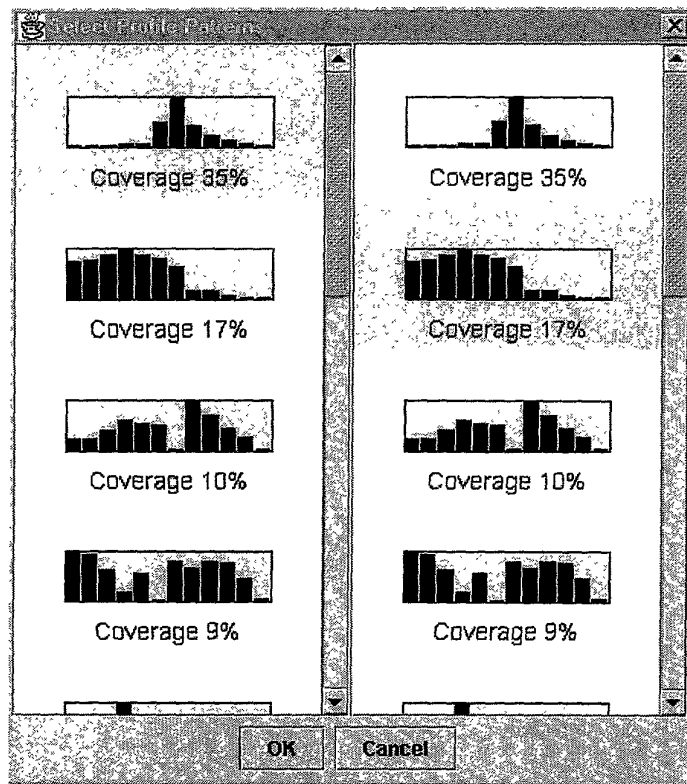


Fig. 33

Select Profile Patterns dialog box.

09765479 012201

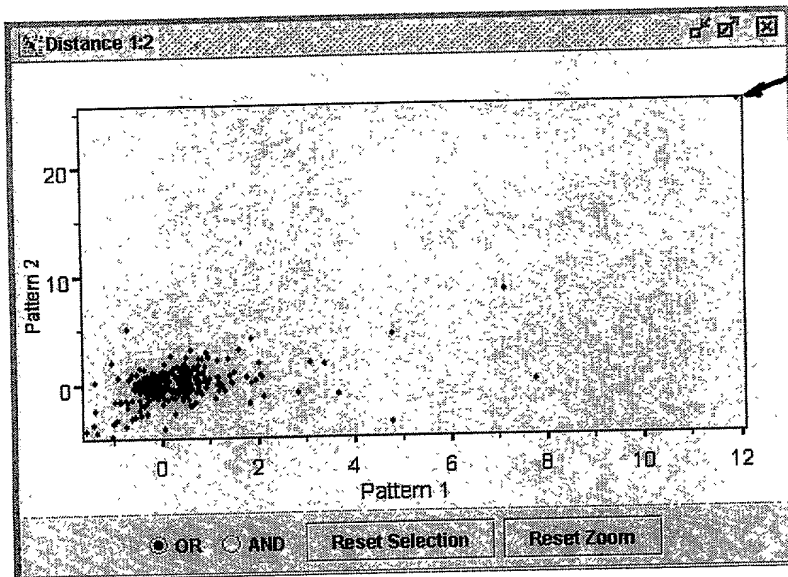


Figure 34

Gene profiled in Fig. 4.5

Distance Plot created with the adjust shift (avg=0) scaling procedure and the patterns displayed in Fig. 4.3.

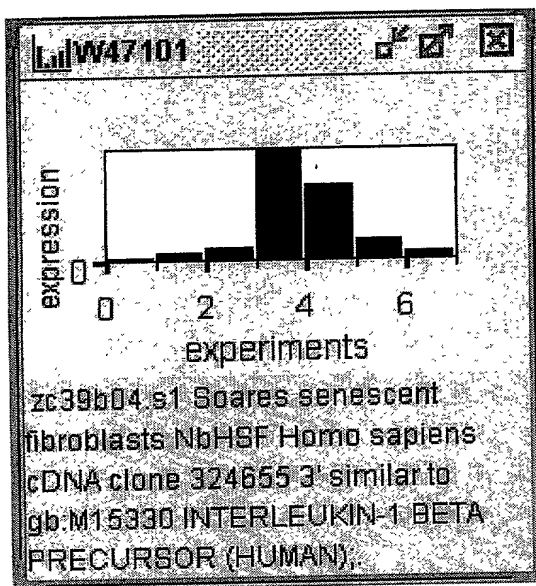


Figure 35

Gene Profile of gene W47101 plotted at (12,26) in the above Distance Plot (Figure).

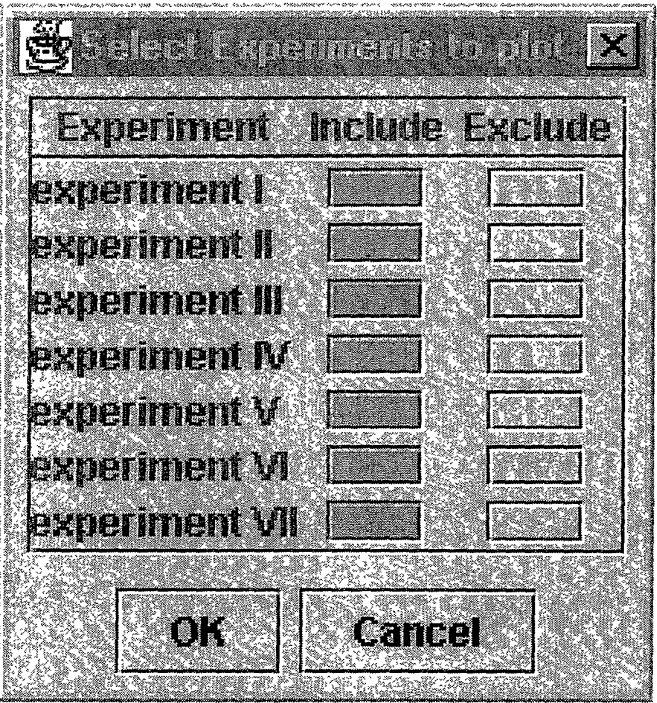


Figure 36

The "Select Experiments to plot" dialog box for the variance histogram.

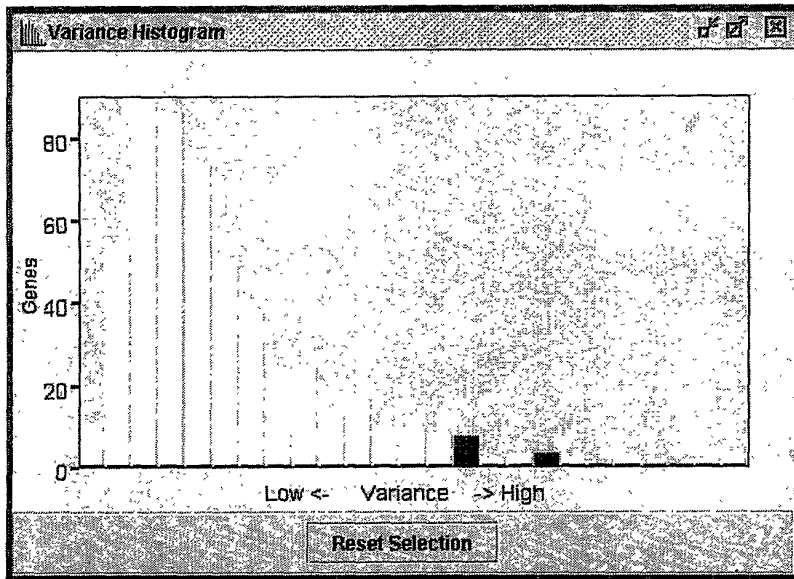


Fig. 37

The Variance Histogram with two bars selected.

Experiment	Target Value
experiment 0 min	1
experiment 15 min	1
experiment 30 min	1
experiment 1 h	1
experiment 2h	1
experiment 4h	1
experiment 6h	1
experiment 8h	1
experiment 12h	10.0
experiment 16h	1
experiment 20h	1
experiment 24h	1

OK Cancel

Fig. 38

The "Enter Correlation Values" dialog box.

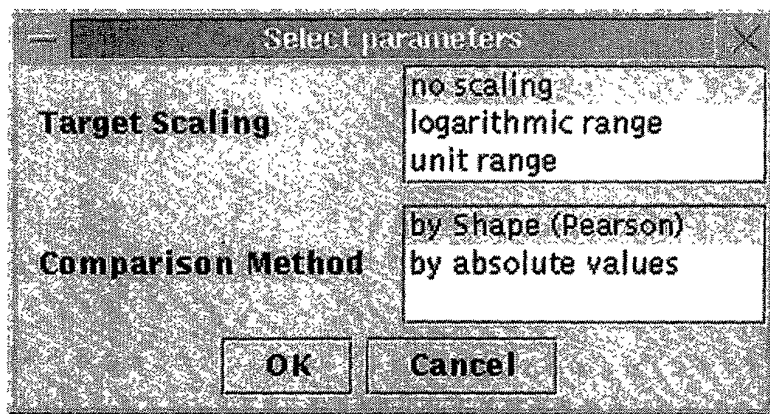


Fig. 39

Correlation histogram parameters dialog box.

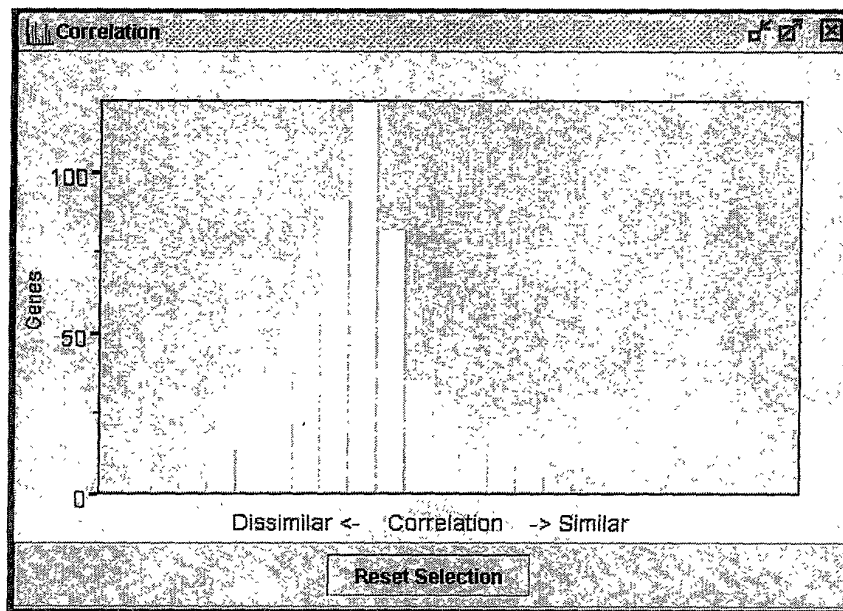


Fig. 40

A correlation histogram created using the "no scaling" and the "by Shape (Pearson)" parameters.

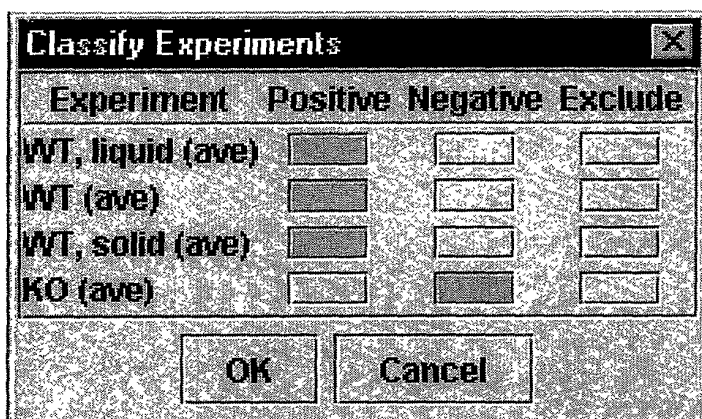


Fig. 41

The "Classify Experiments" dialog box.

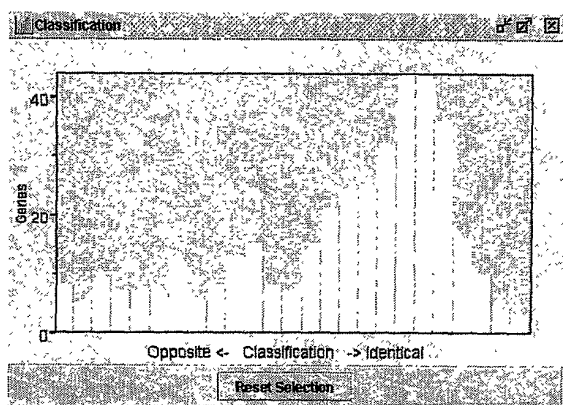


Figure 42

The Classification histogram created using the "adjust scales" scaling procedure and the data displayed in the "Classify Experiments" dialog box above (Figure).

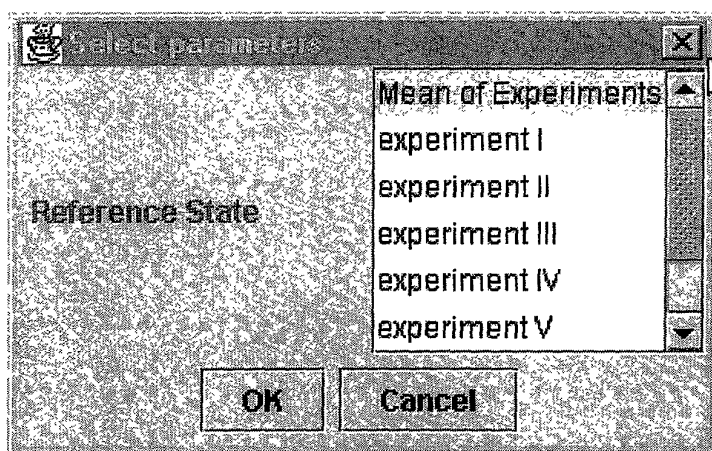


Fig. 43

Select reference state dialog box.

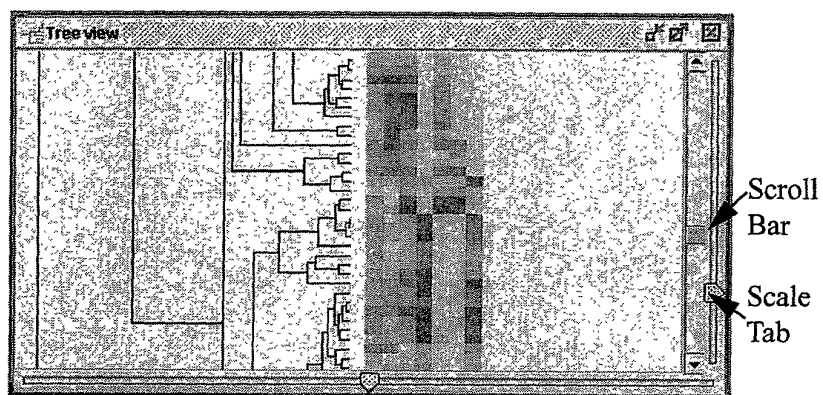


Figure 44

The Cluster Tree analysis view.

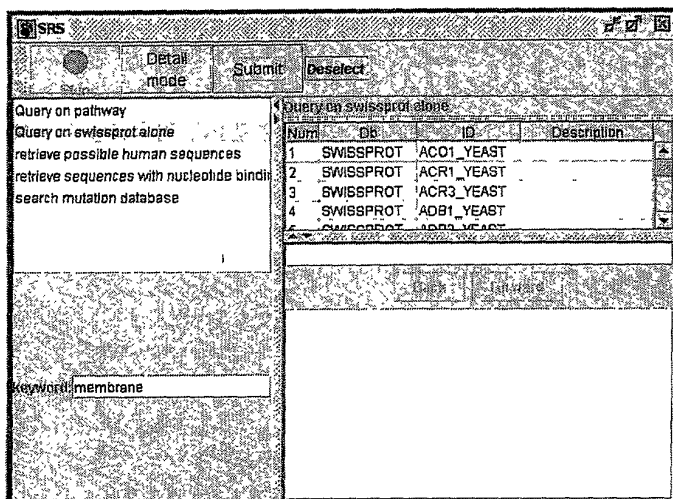


Fig. 45

The SRS Interface, in Simple Mode.

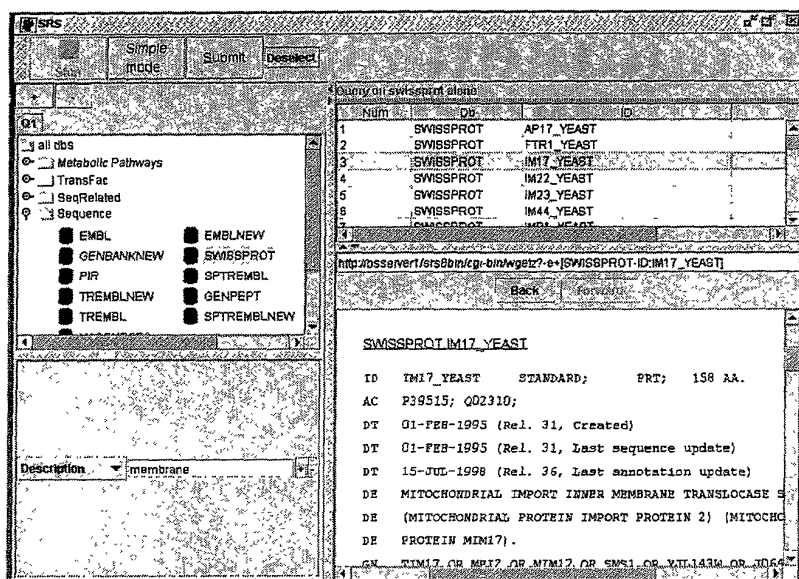


Fig. 46

The software SRS Interface in Detail Mode displaying a completed query and a database entry.

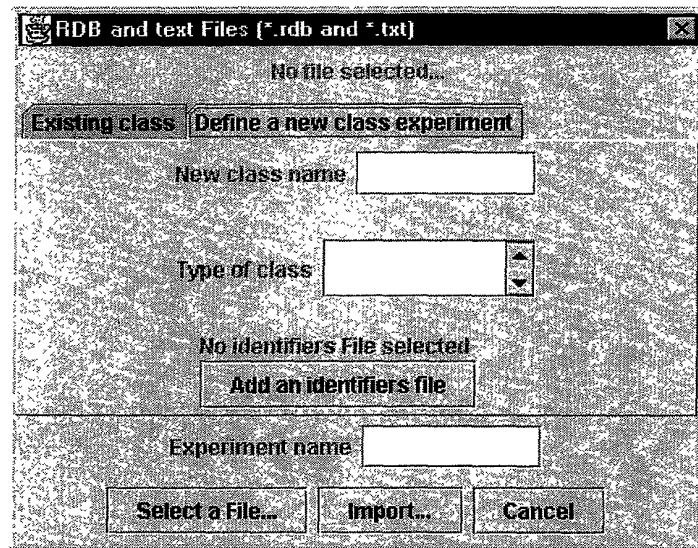


Fig. 47

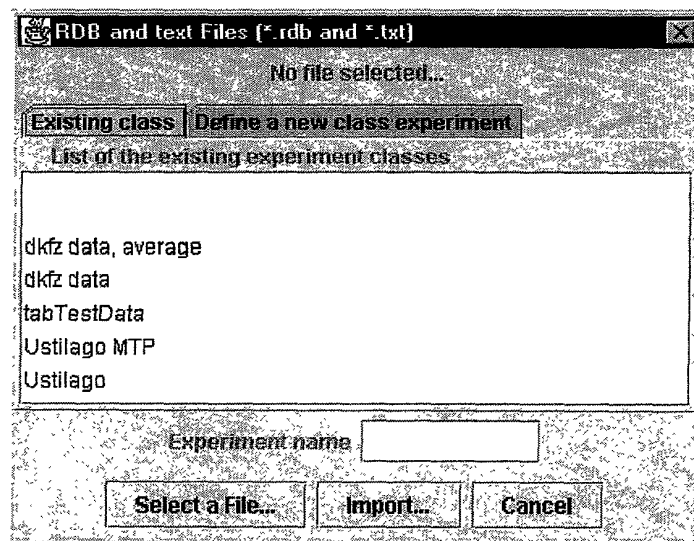


Fig. 48

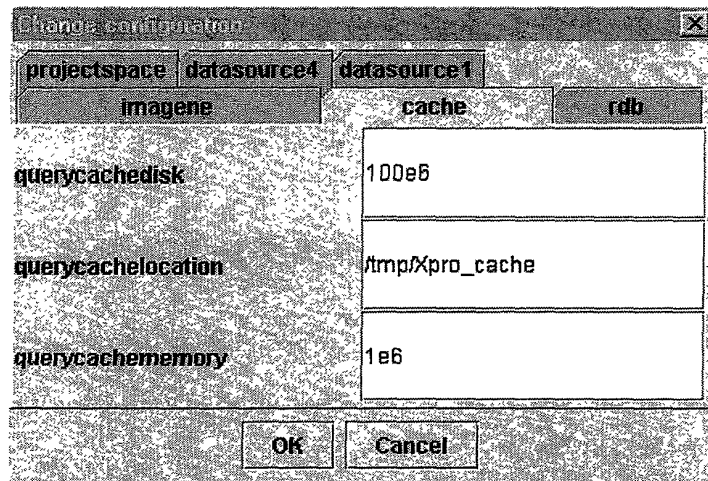


Figure 49

Change configuration dialog box.

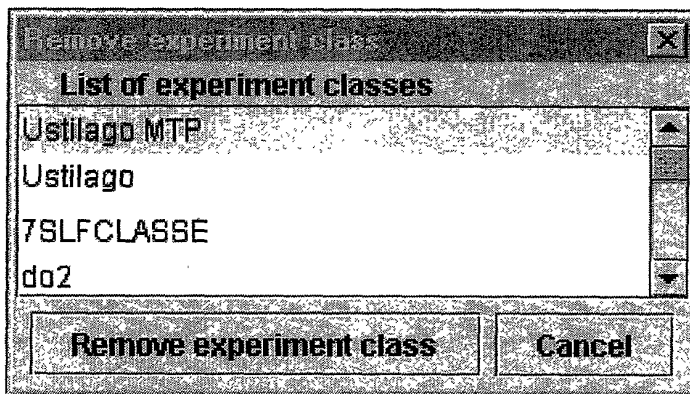


Fig. 50

Remove experiment class dialog box.

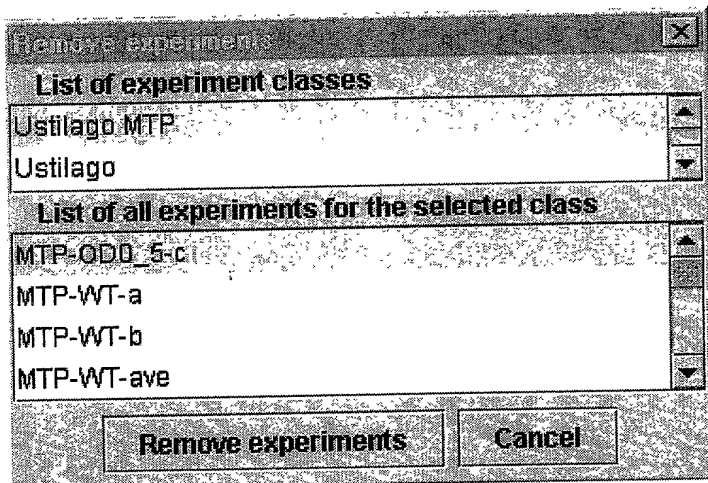


Fig. 51

Remove experiments dialog box.

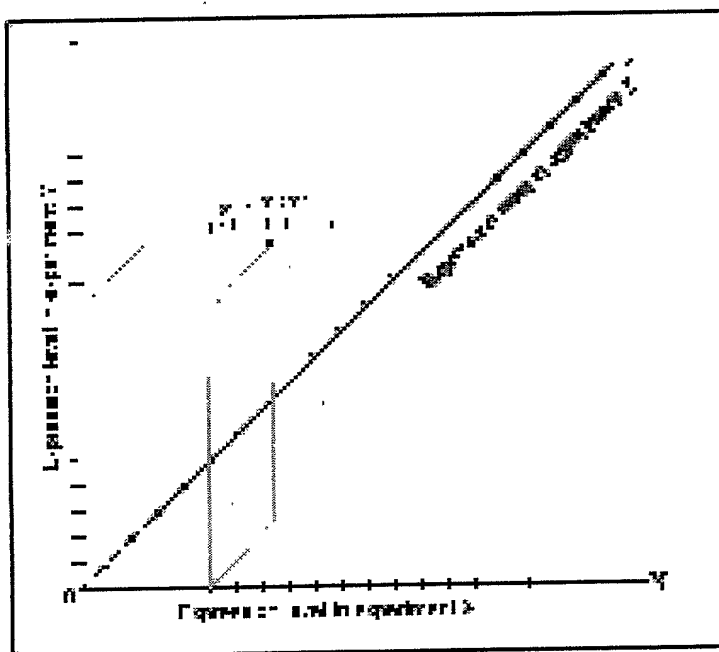


Fig. 52

A point (gene) plotted in three dimensions.

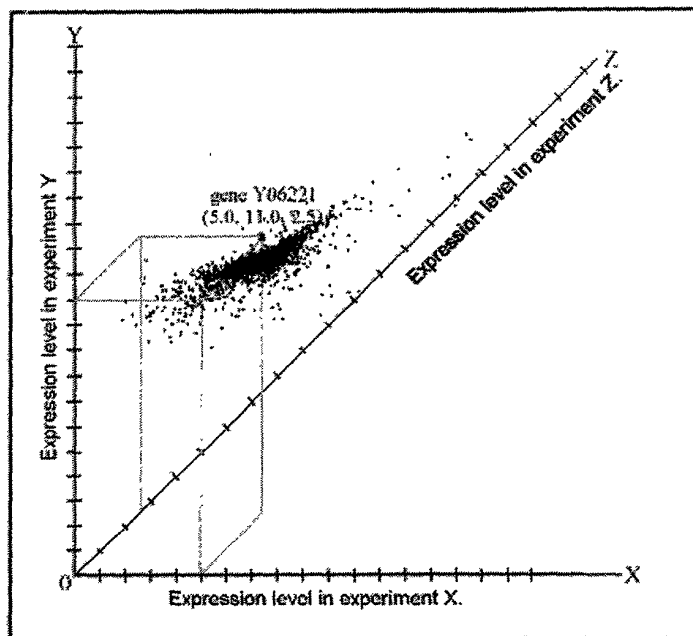


Fig. 53

Three experiments plotted in 3 dimensions.

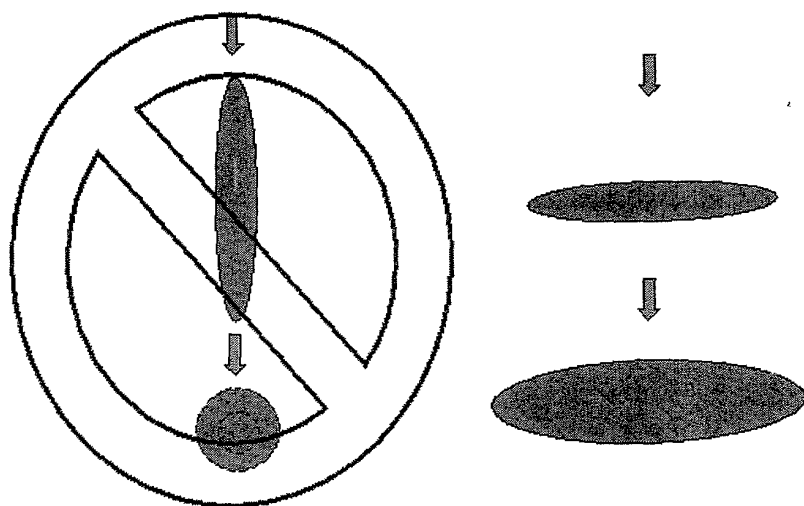
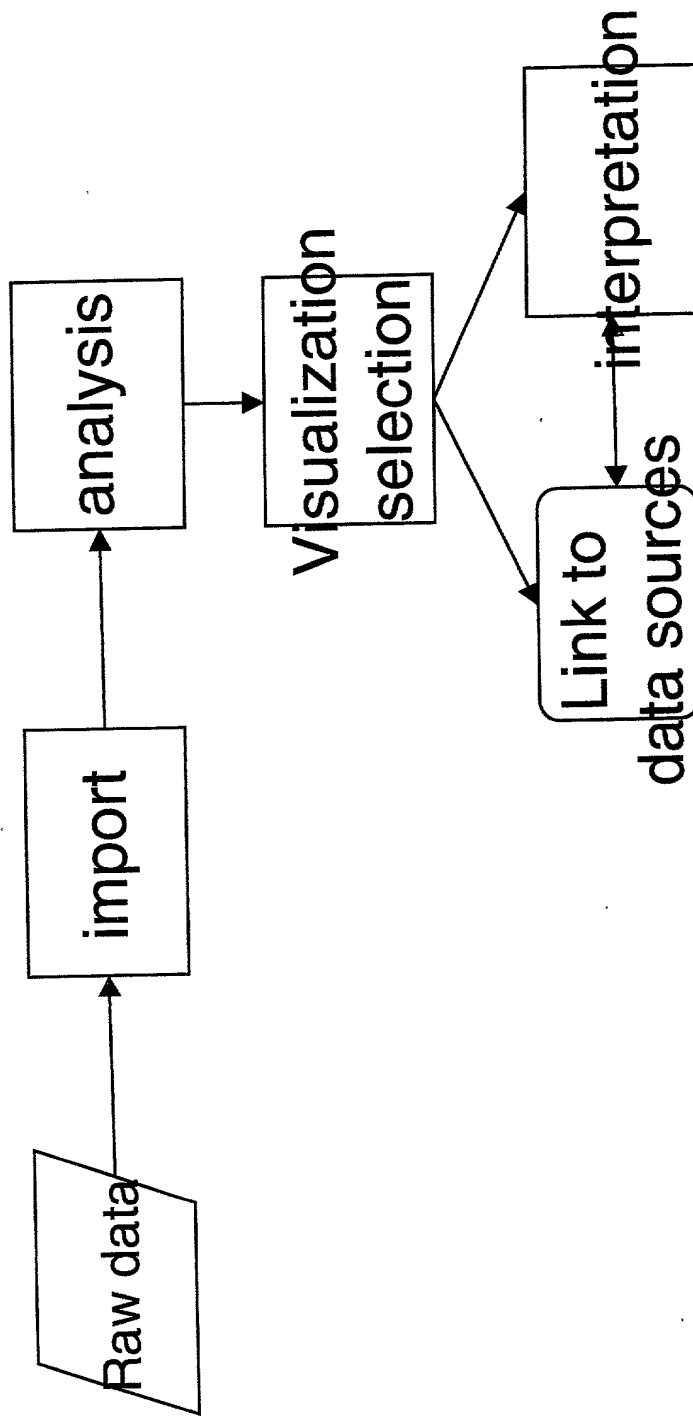


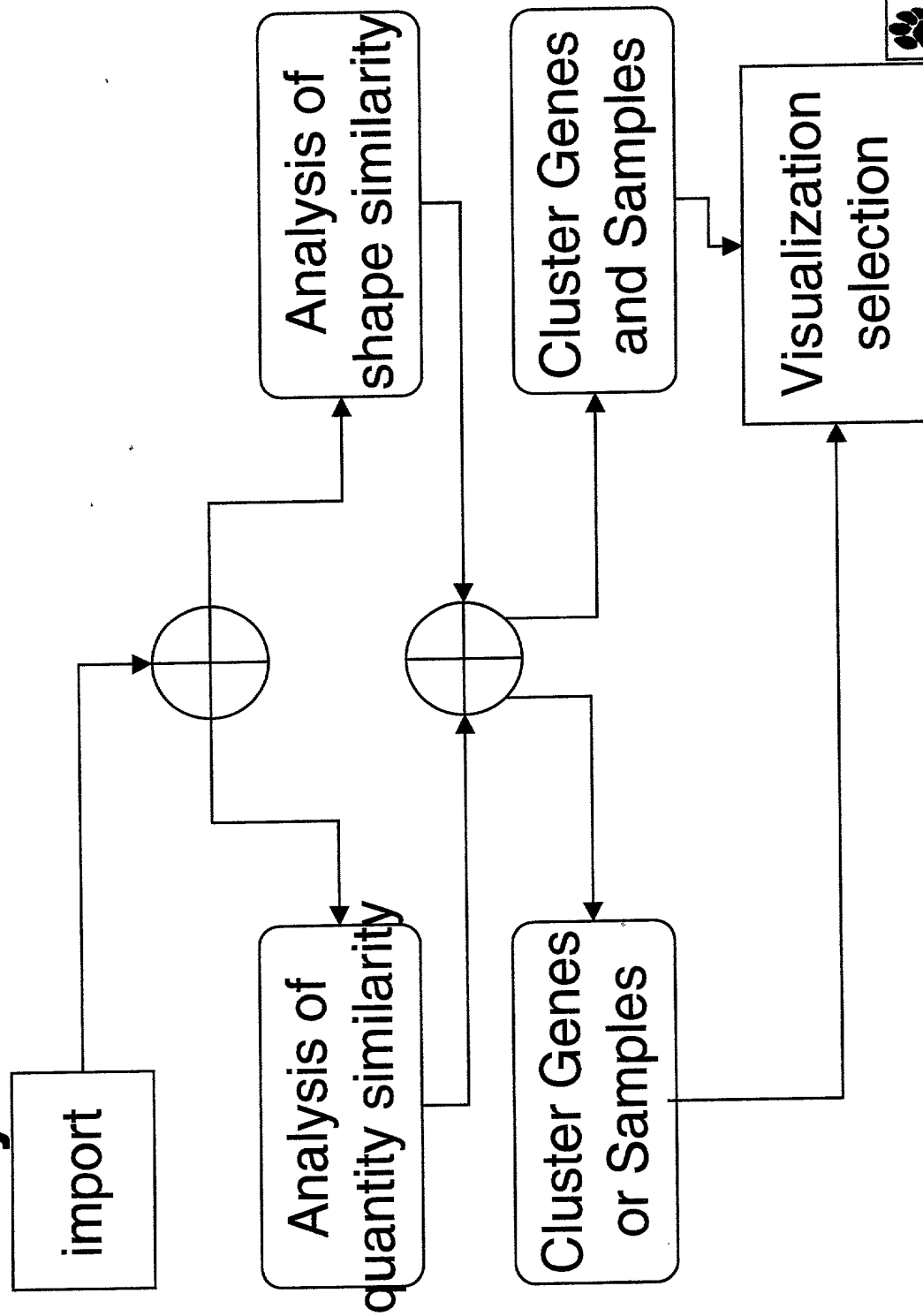
Fig. 54

Squash the cigar along its side to best preserve its shape.

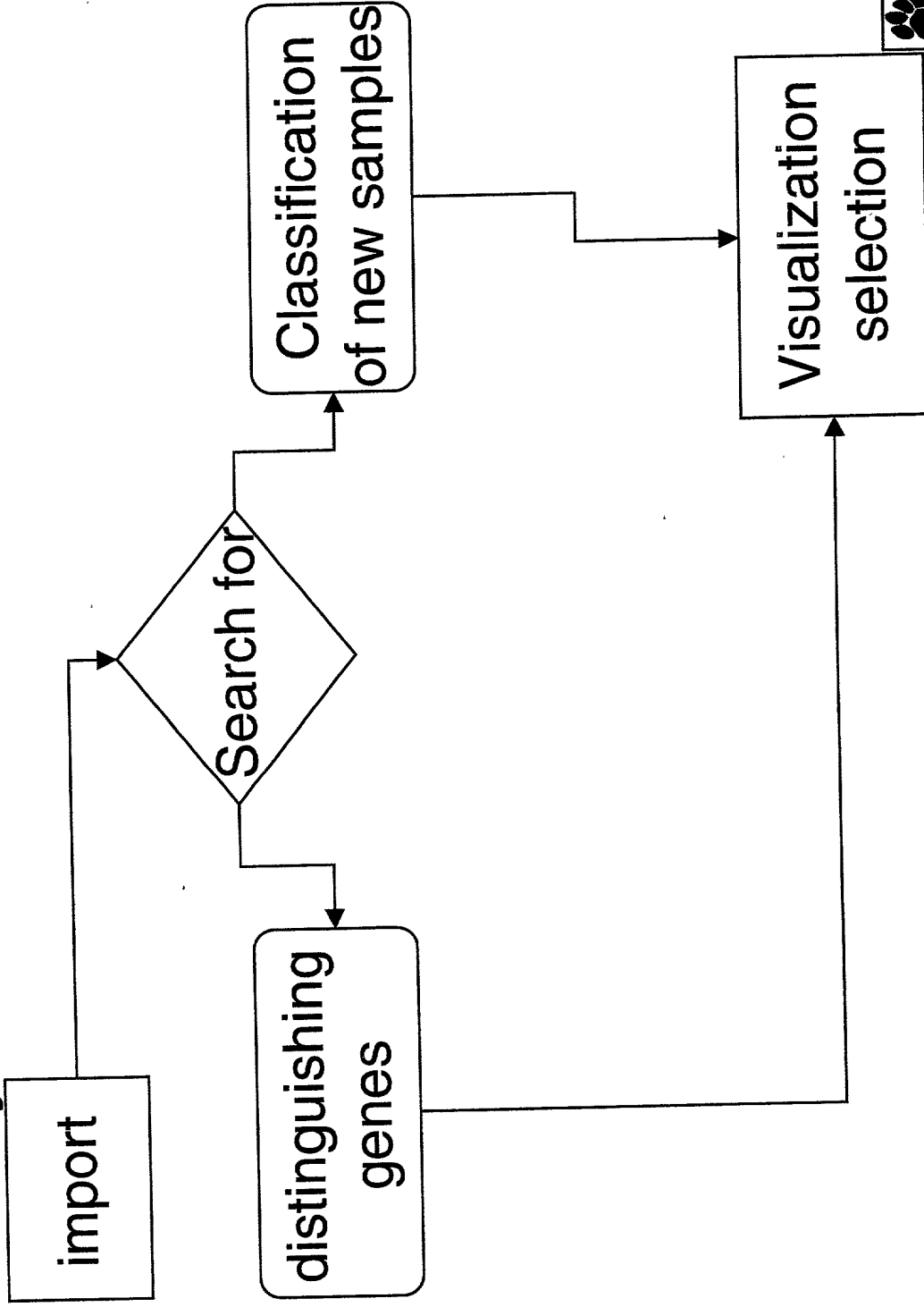
General flow chart array analysis



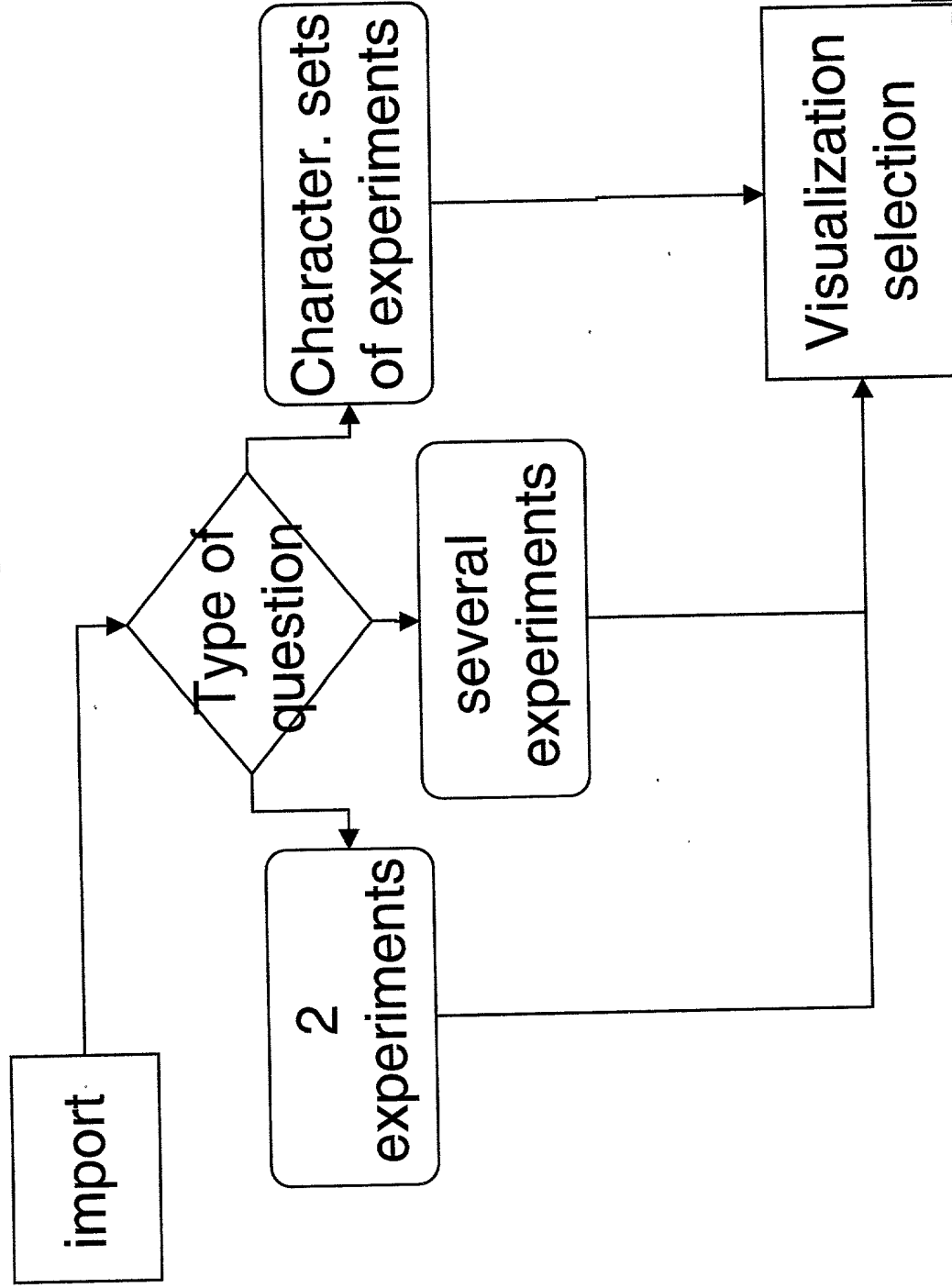
Analysis of several uncharacterized samples

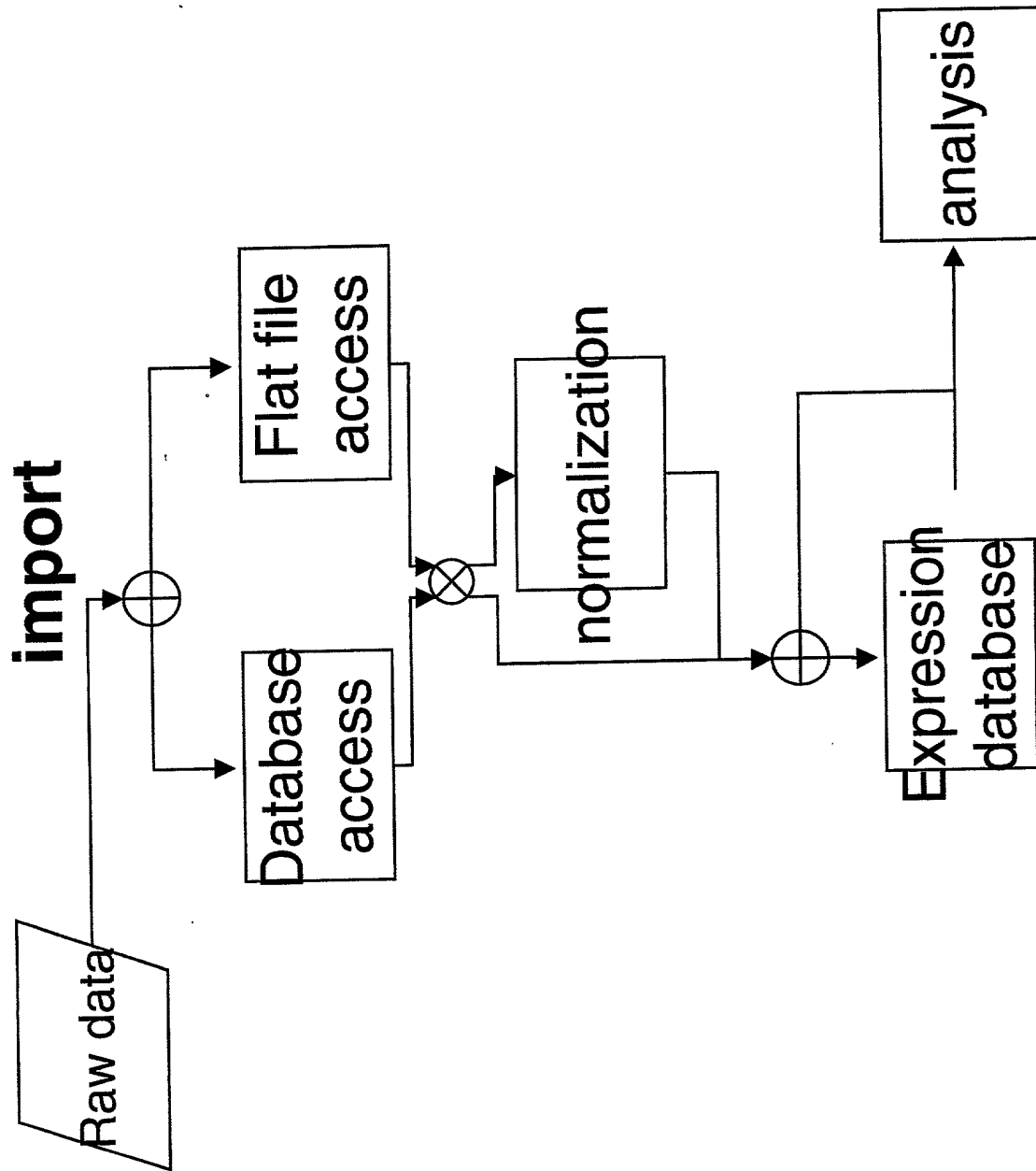


Analysis of characterized sets of samples



Analysis





simultaneous analysis of Gene and Sample similarity

Data = X

- Singular value decomposition based

import

More genes than samples?

no
Similarity matrix of genes $(X \cdot X^T) = S$

Gene

SVD of S

coordinates = $\lambda \cdot \text{eigenvector } V$

yes
Similarity matrix of samples $(X \cdot X^T) = S'$

Sample

SVD of S'

coordinates = $\lambda \cdot \text{eigenvector } V'$

Sample

coordinates = $(1/\lambda) \cdot X \cdot \text{eigenvector } V$

" (1/λ) · X · eigenvector V

Gene

coordinates = $\lambda \cdot X^T \cdot \text{eigenvector } V'$

" λ · X^T · eigenvector V'

Visualization selection

FIG. 60



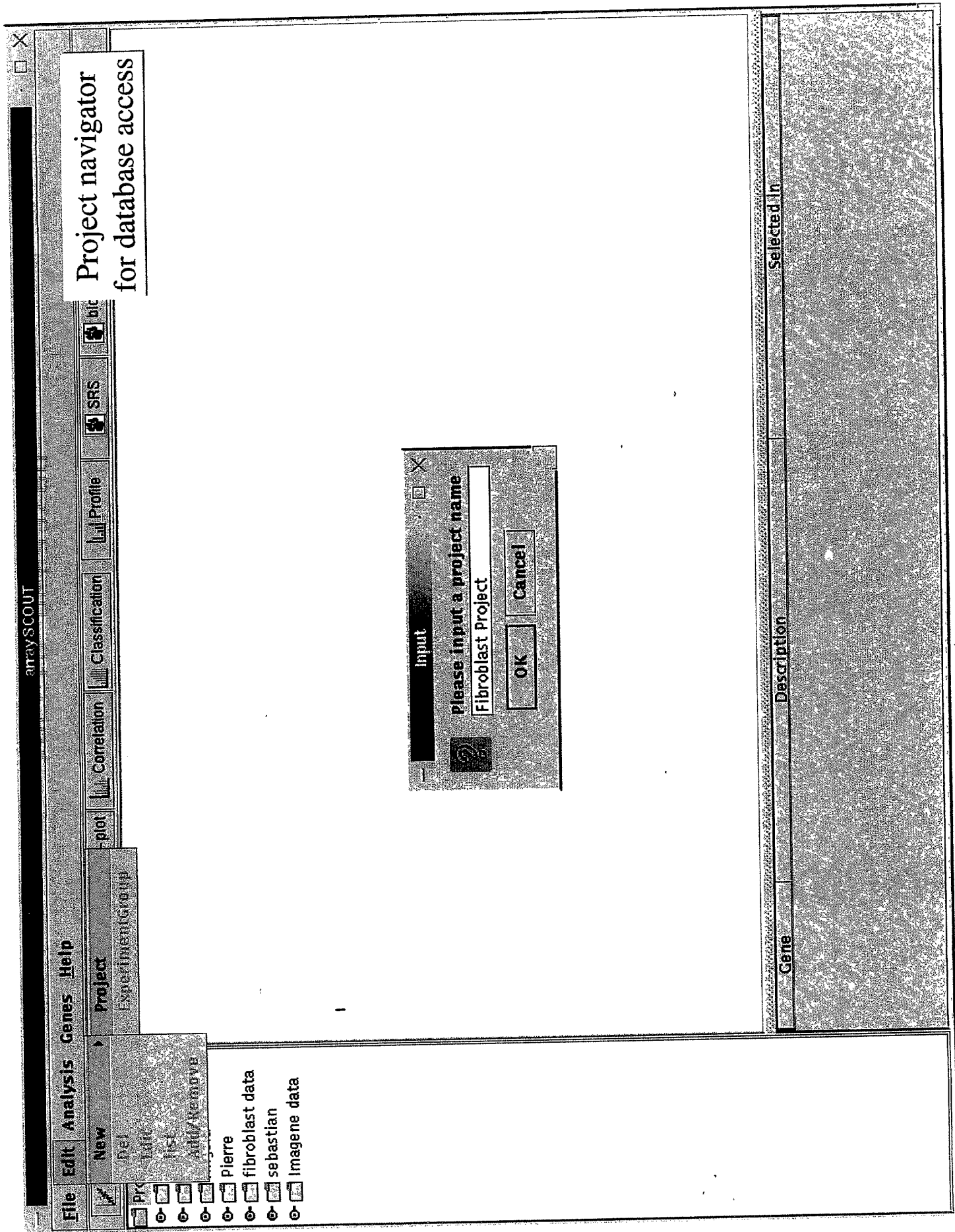


FIG. 61

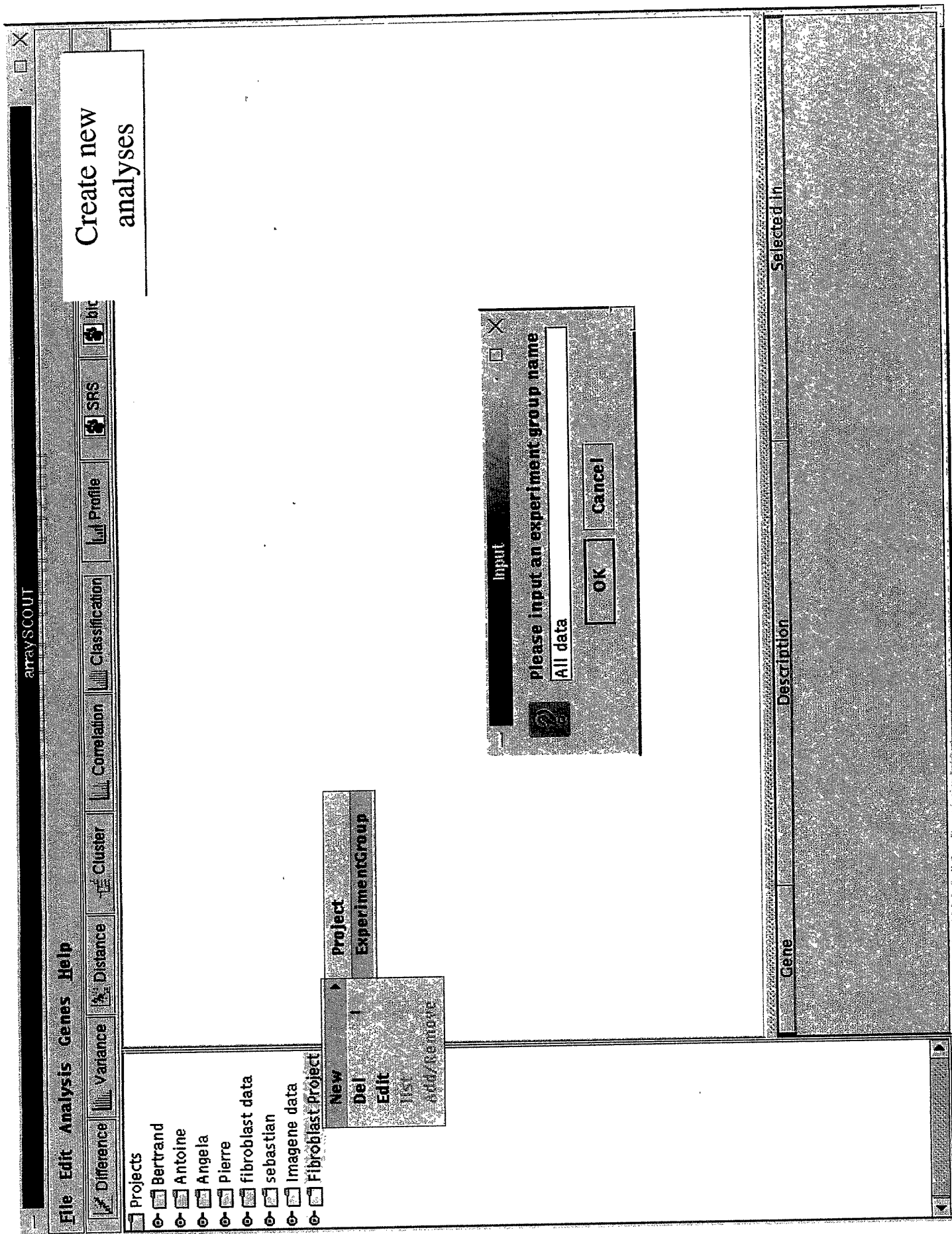


FIG. 62

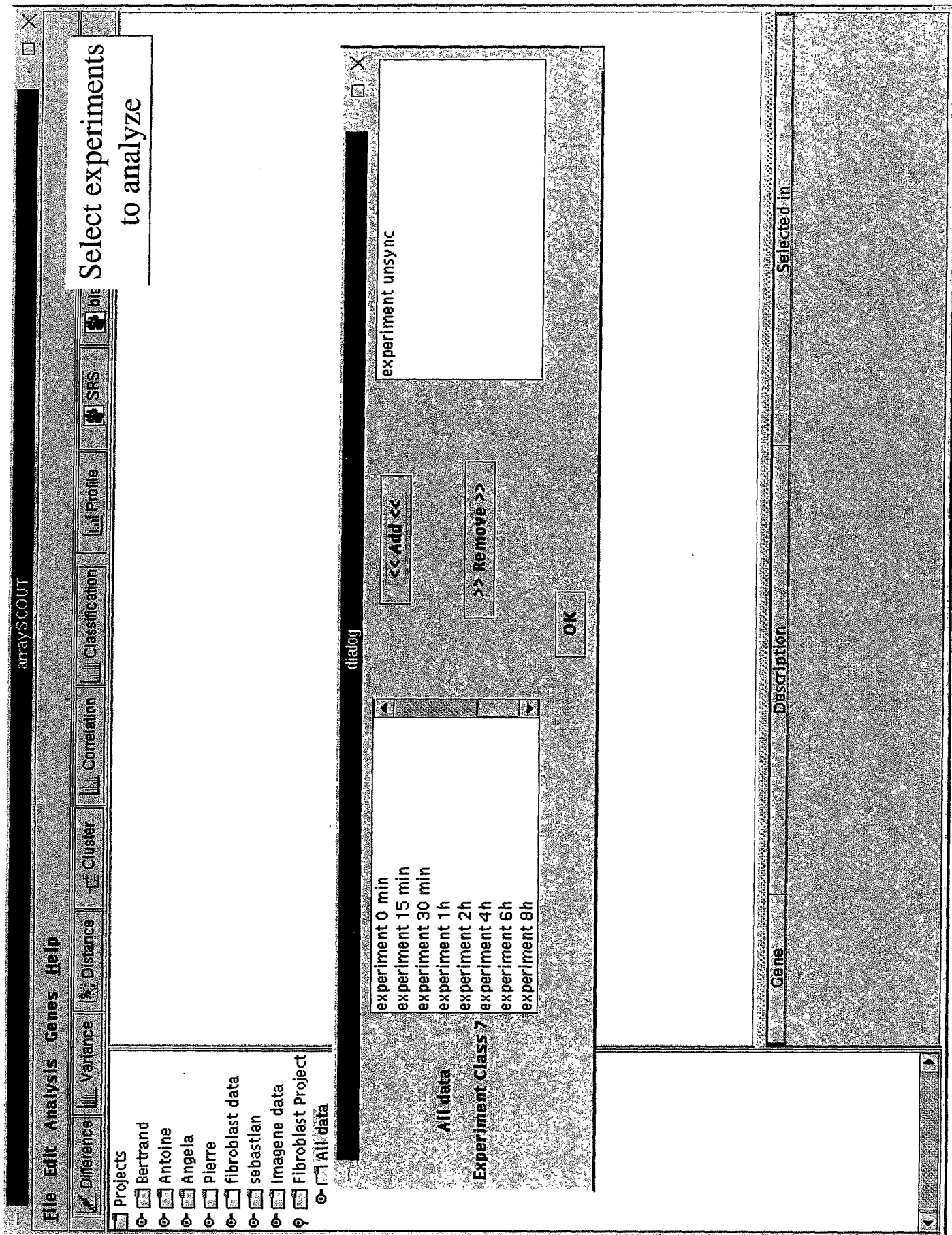


FIG. 63

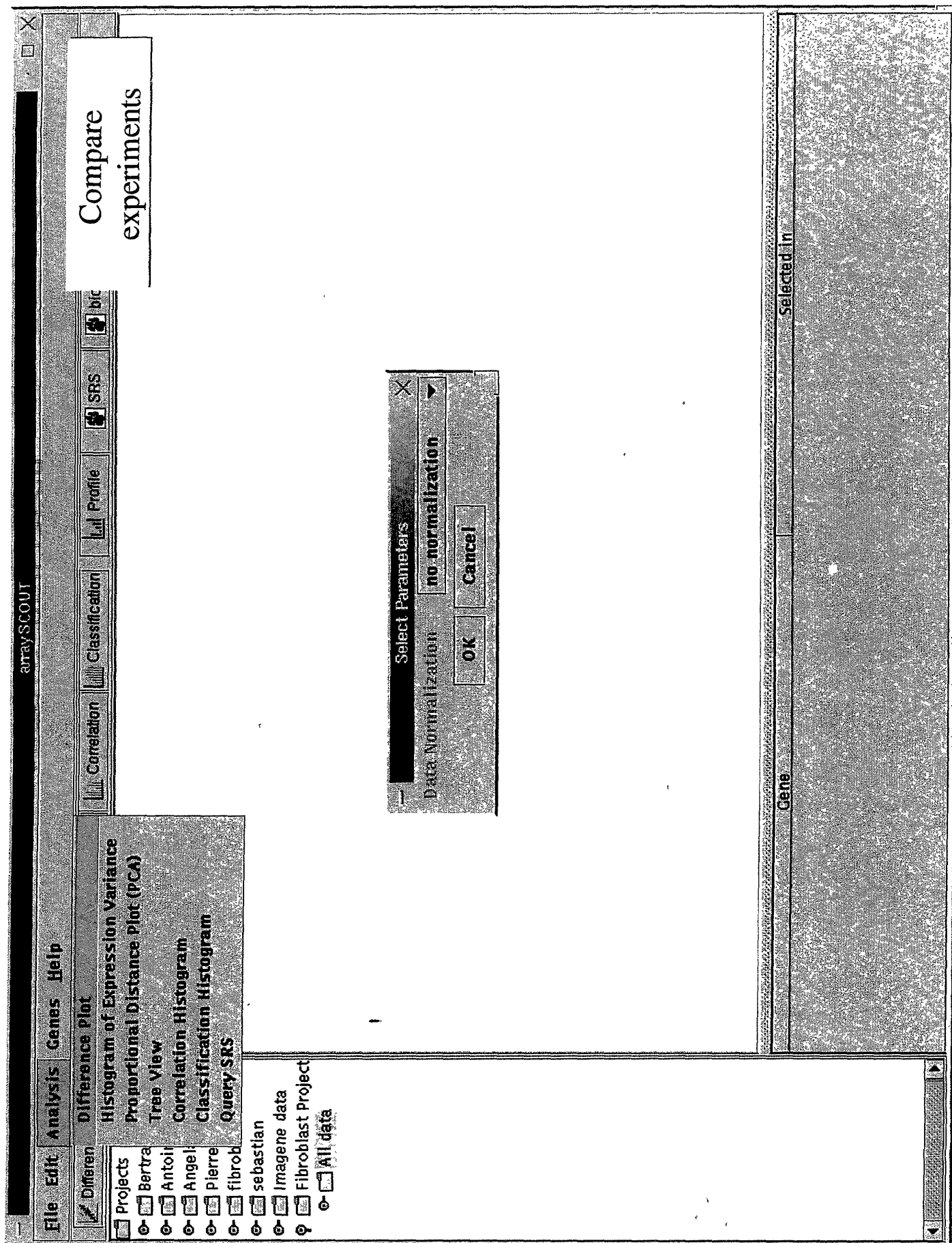


FIG. 64

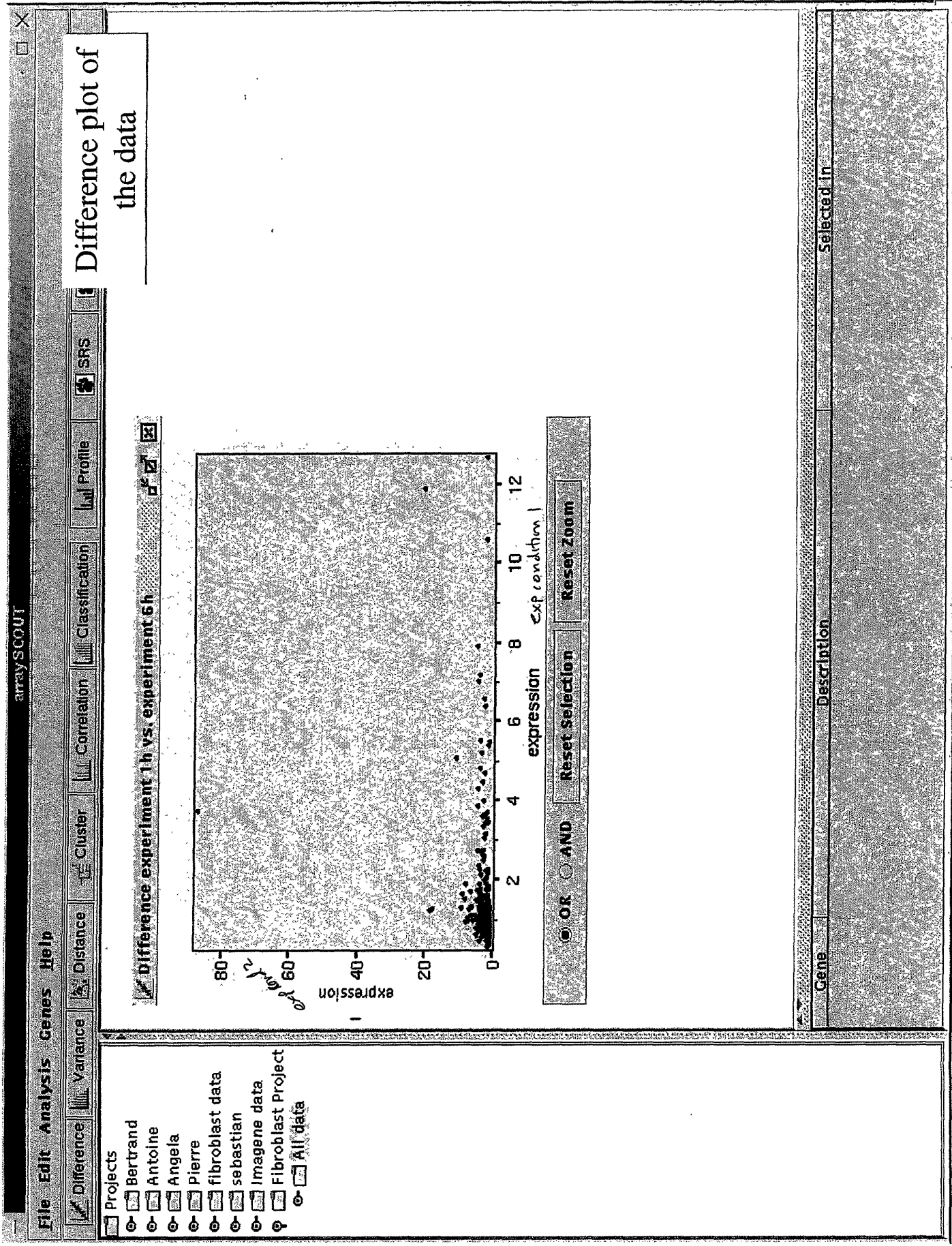


Fig. 65

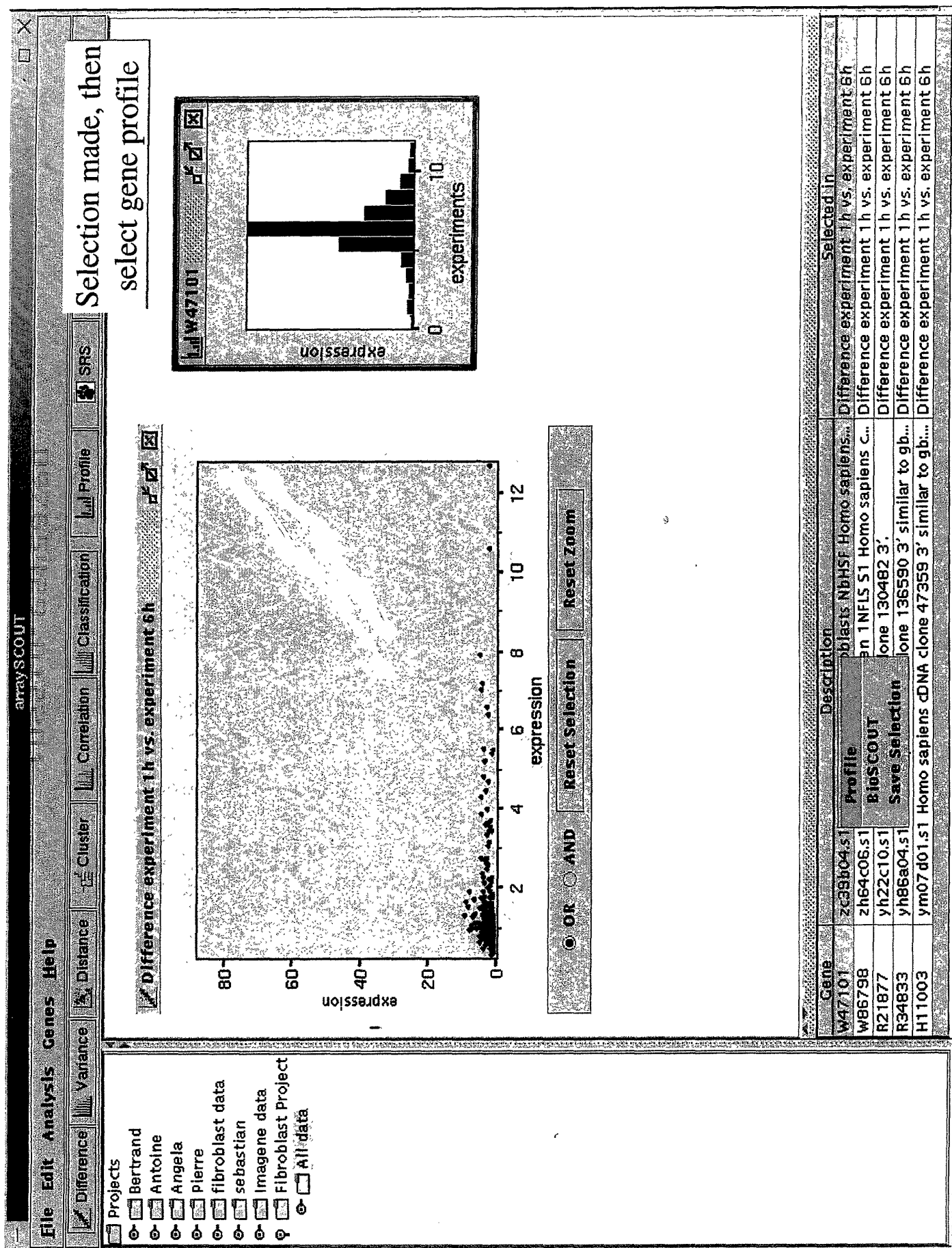
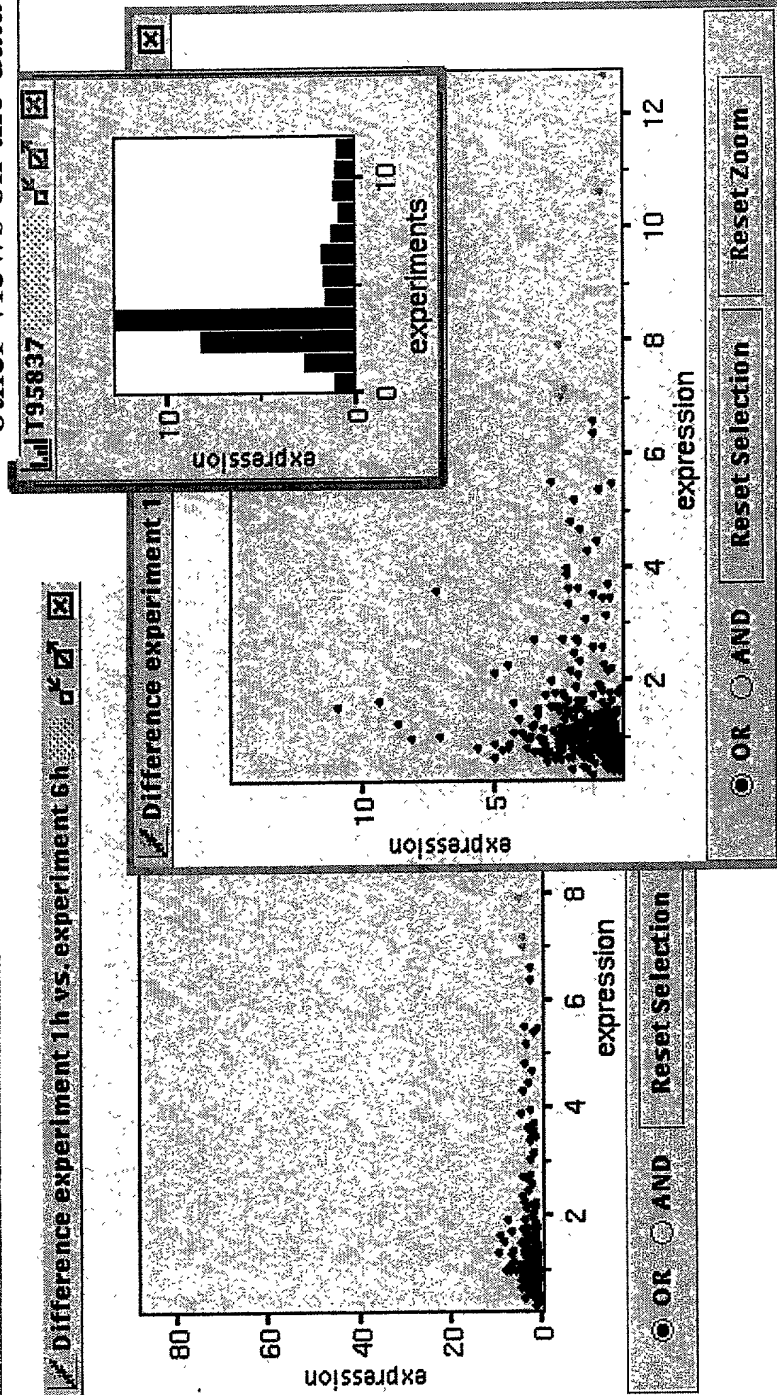


Fig. 66

Display and select within other views on the data



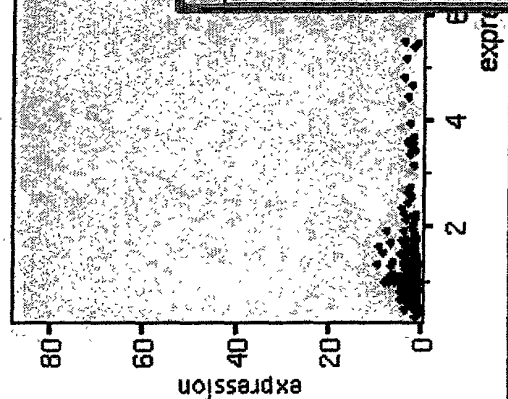
Gene	Description	Selected in
T95837	y42c02.s1 Homo sapiens cDNA clone 120386 3'	Difference experiment 1h vs. experiment 12h
H27557	y161g03.s1 Homo sapiens cDNA clone 162772 3' similar to ...	Difference experiment 1h vs. experiment 12h
w47101	z339b04.s1 Soares senescent fibroblasts NbHSF Homo sapien...	Difference experiment 1h vs. experiment 6h
w86798	zh64c06.s1 Soares fetal liver spleen 1NFLS S1 Homo sapien...	Difference experiment 1h vs. experiment 6h
R21877	yh22c10.s1 Homo sapiens cDNA clone 130482 3'	Difference experiment 1h vs. experiment 6h
R34833	yh86a04.s1 Homo sapiens cDNA clone 136590 3' similar to ...	Difference experiment 1h vs. experiment 6h
H11003	ym07d01.s1 Homo sapiens cDNA clone 47359 3' similar to ...	Difference experiment 1h vs. experiment 6h
AA016304	ze38bd08.s1 Soares retina N2b4HR Homo sapiens cDNA clon...	Difference experiment 1h vs. experiment 12h
w88807	zh71b12.s1 Soares fetal liver spleen 1NFLS S1 Homo sapien...	Difference experiment 1h vs. experiment 12h
w90037	zh69f11.s1 Soares fetal liver spleen 1NFLS S1 Homo sapien...	Difference experiment 1h vs. experiment 12h

Fig. 6.7

Tree representation
with selection in views

☒ Difference ☐ Variance ☐ Distance ☐ Cluster ☐ Correlation ☐ Classification ☐ Profile

☒ Projects
☐ Bertrand
☐ Antoine
☐ Angela
☐ Pierre
☐ fibroblast data
☐ sebastian
☐ Imogene data
☐ Fibroblast Project
☒ All data



Tree View of All data

W73148
 AA055549
 AA045715
 N98591
 N99070
 W98507
 AA055585
 W98507
 AA016304
 AA013396
 N23941
 T70079
 AA057826
 AA026120
 W42606
 AA021163

☒ Difference experiment 1h vs. experiment 12h

Gene	Description	Selected in
W47101	zc39b04.s1 Soares senescent fibroblasts NbHSF Homo sapi...	Difference experiment 1h vs. experiment 6h
W86798	zh64c06.s1 Soares fetal liver spleen 1NFLS S1 Homo sapien...	Difference experiment 1h vs. experiment 6h
R21877	yh22c10.s1 Homo sapiens cDNA clone 130482 3'.	Difference experiment 1h vs. experiment 6h
R34833	yh86a04.s1 Homo sapiens cDNA clone 136590 3' similar to...	Difference experiment 1h vs. experiment 6h
AA044235		
R77289		
AA047266		
H11003	ym07d01.s1 Homo sapiens cDNA clone 47359 3' similar to ...	Difference experiment 1h vs. experiment 6h
AA057359		

File Edit Analysis Genes Help

☒ Difference ☒ Variance ☒ Cluster ☒ Correlation ☒ Classification ☒ Profile ☒ SRS ☒ bit

Projects

- ☒ Bertrand
- ☒ Antoine
- ☒ Angela
- ☒ Pierre
- ☒ fibroblast data
- ☒ sebastien
- ☒ Image ne data
- ☒ Fibroblast Project
- ☐ All data

Compare profiles

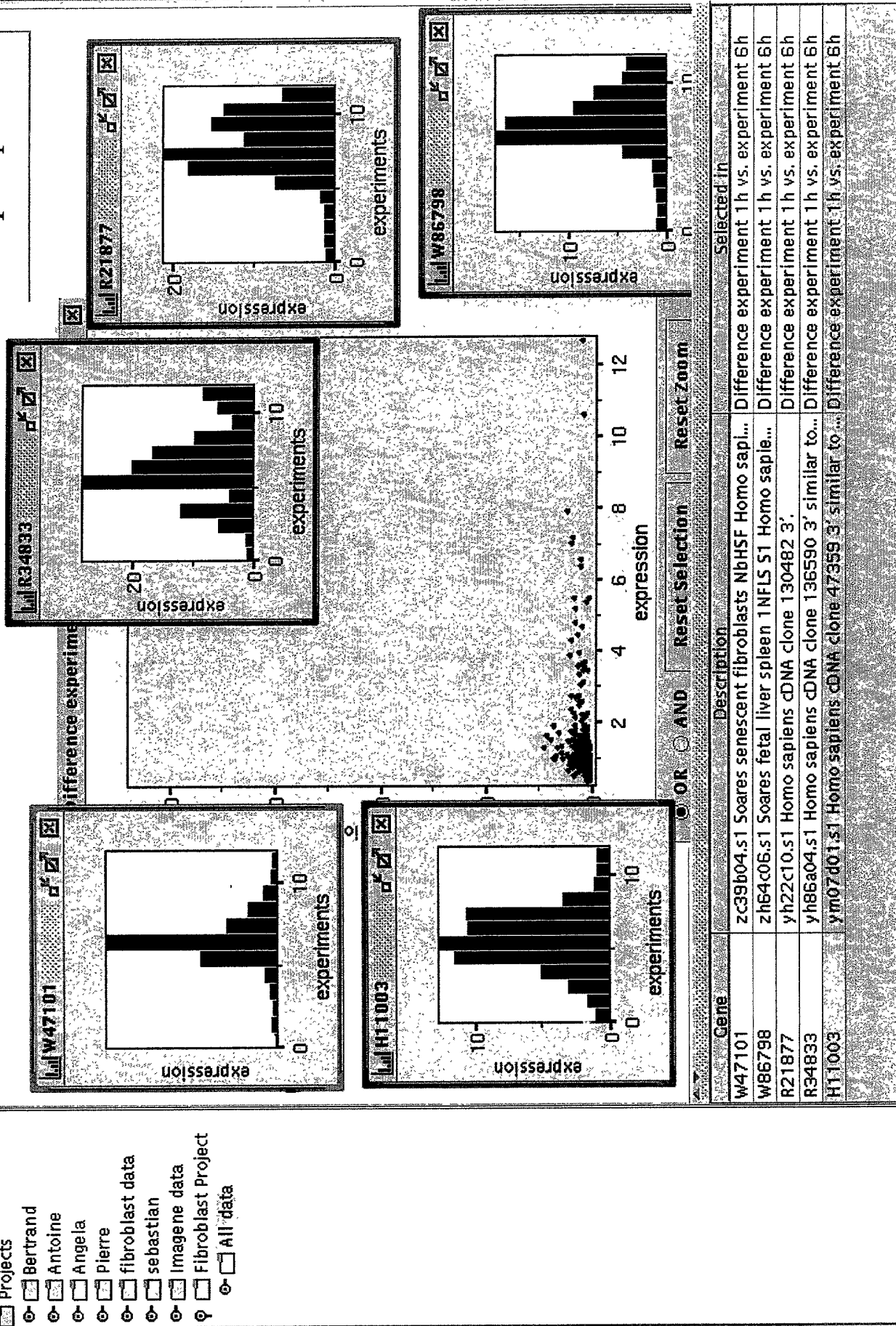


Fig. 69

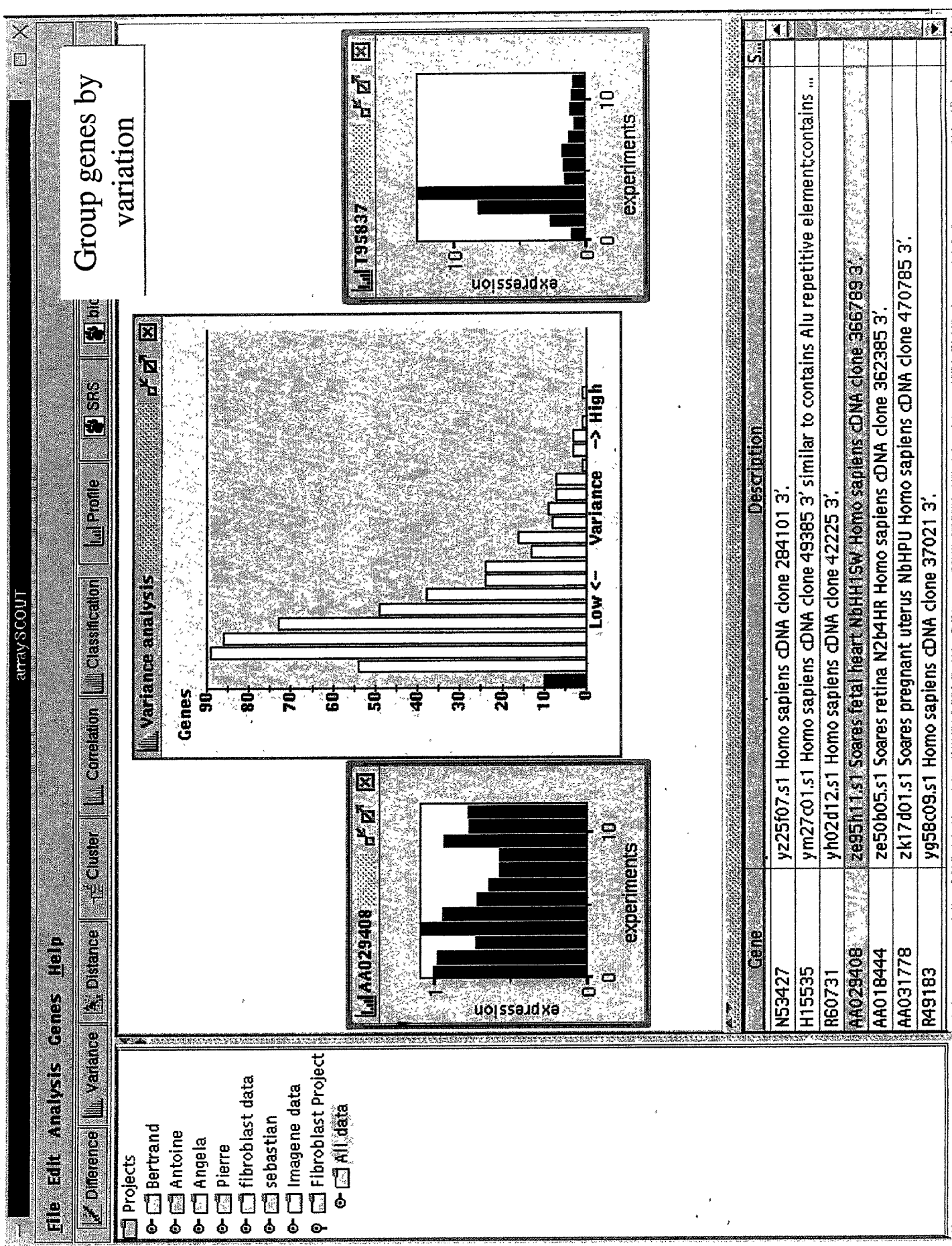


FIG. 70

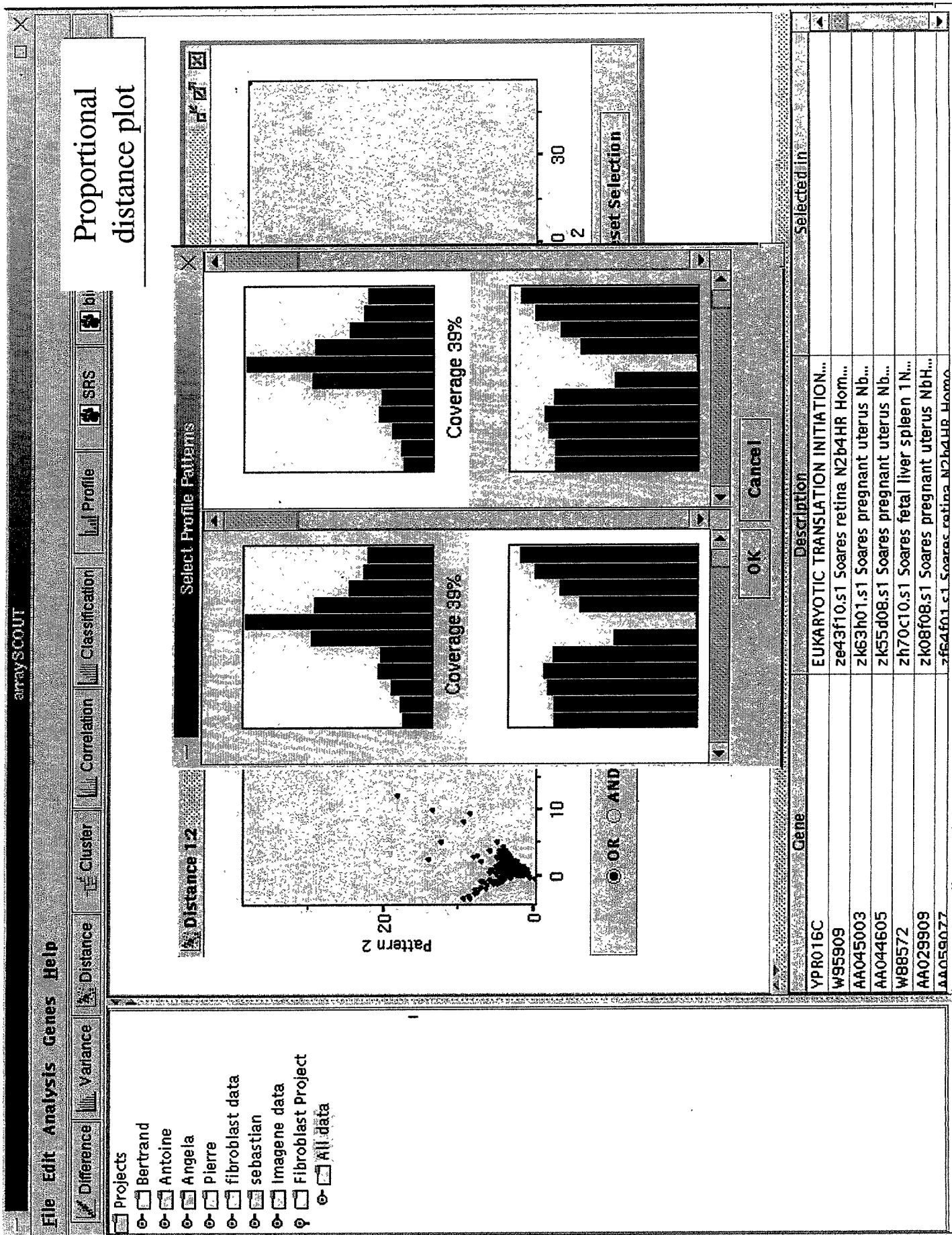
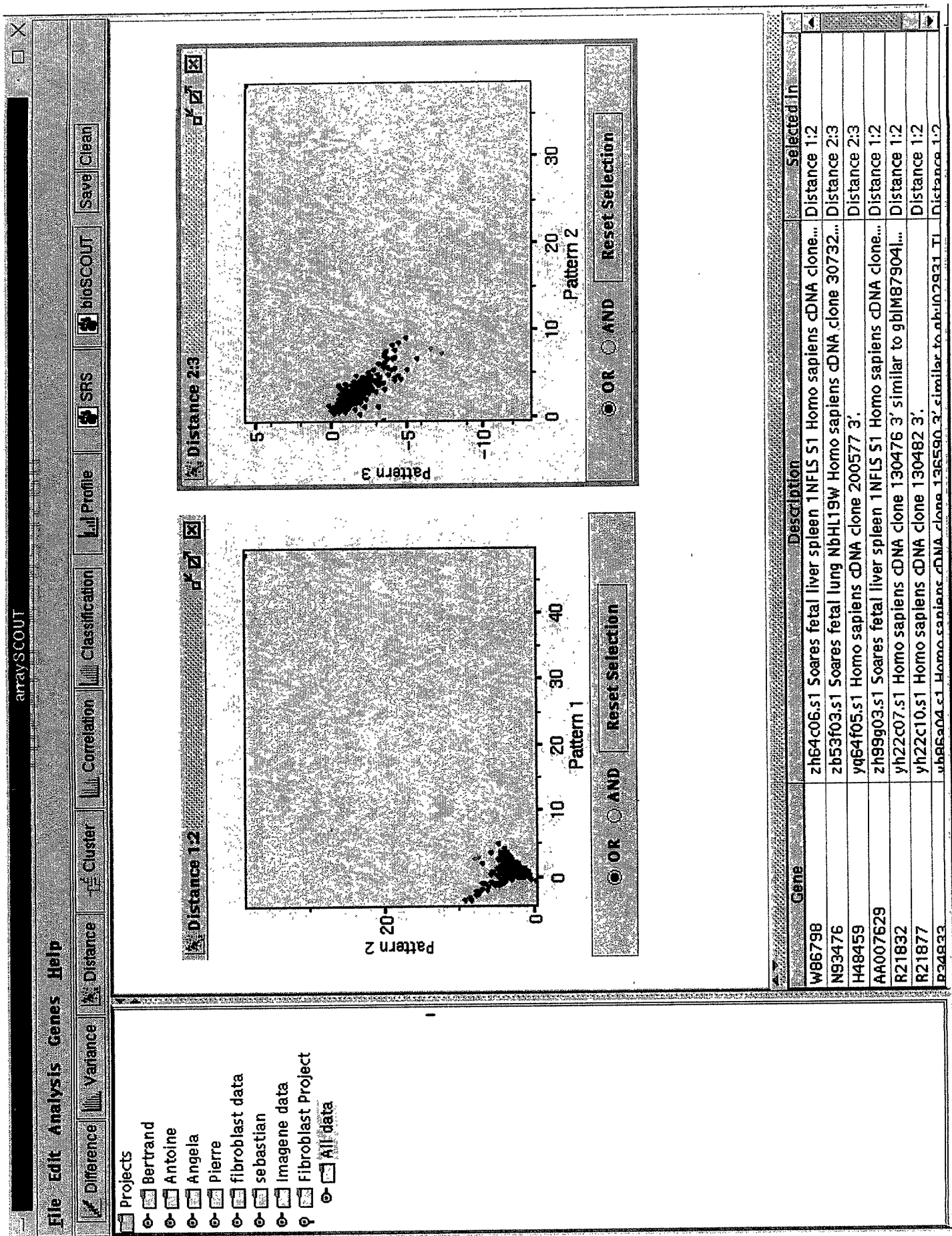


FIG. 71



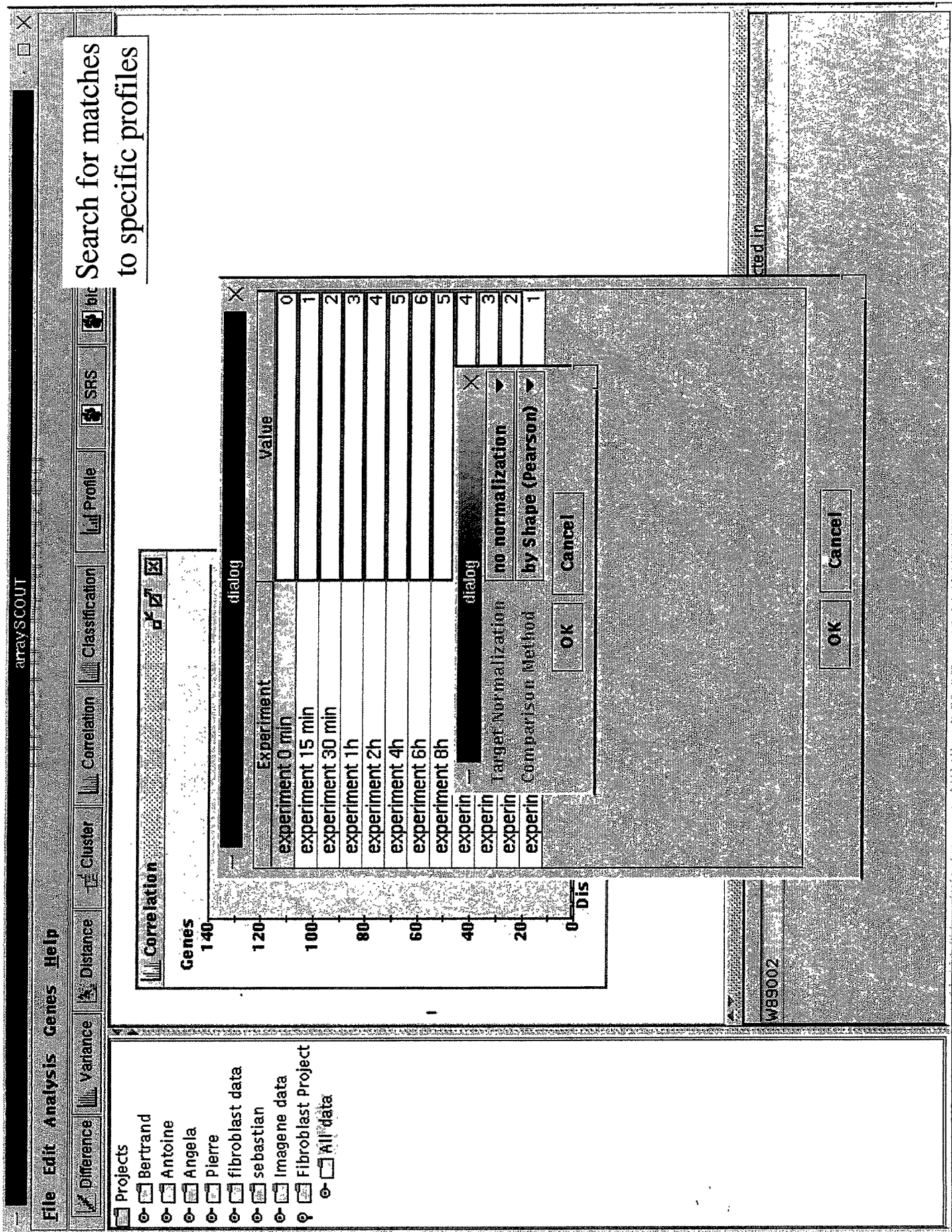


Fig. 73

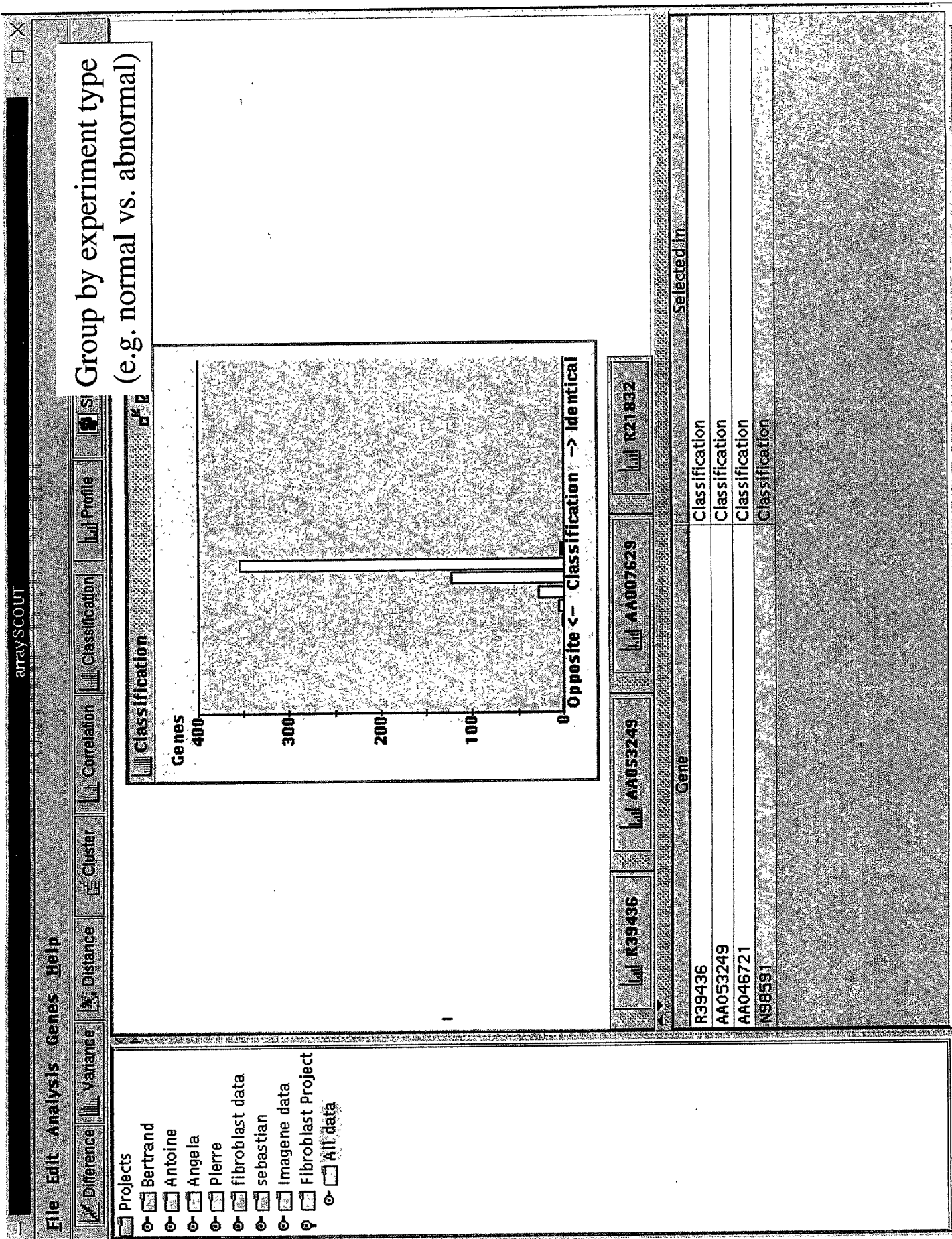
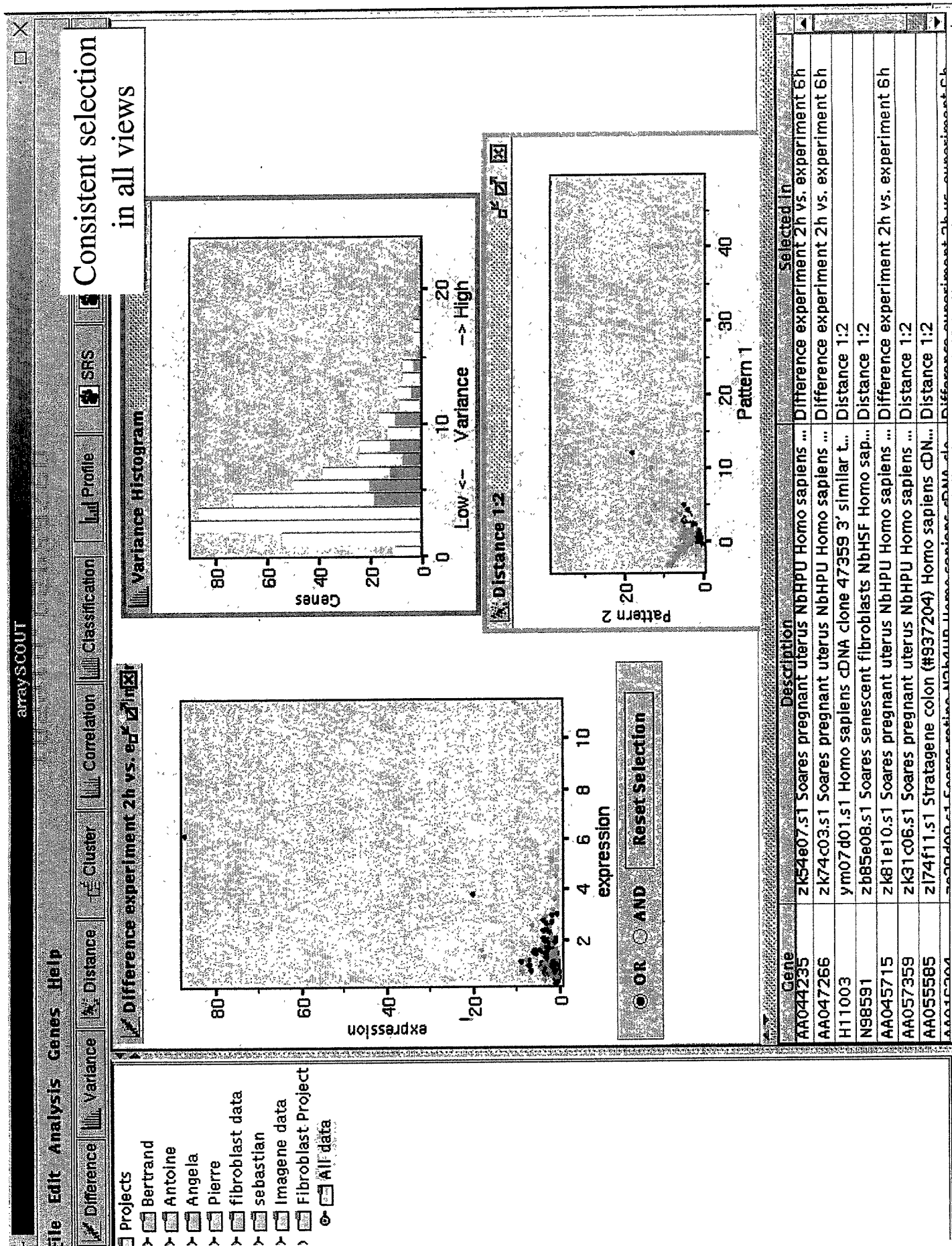


Fig. 74



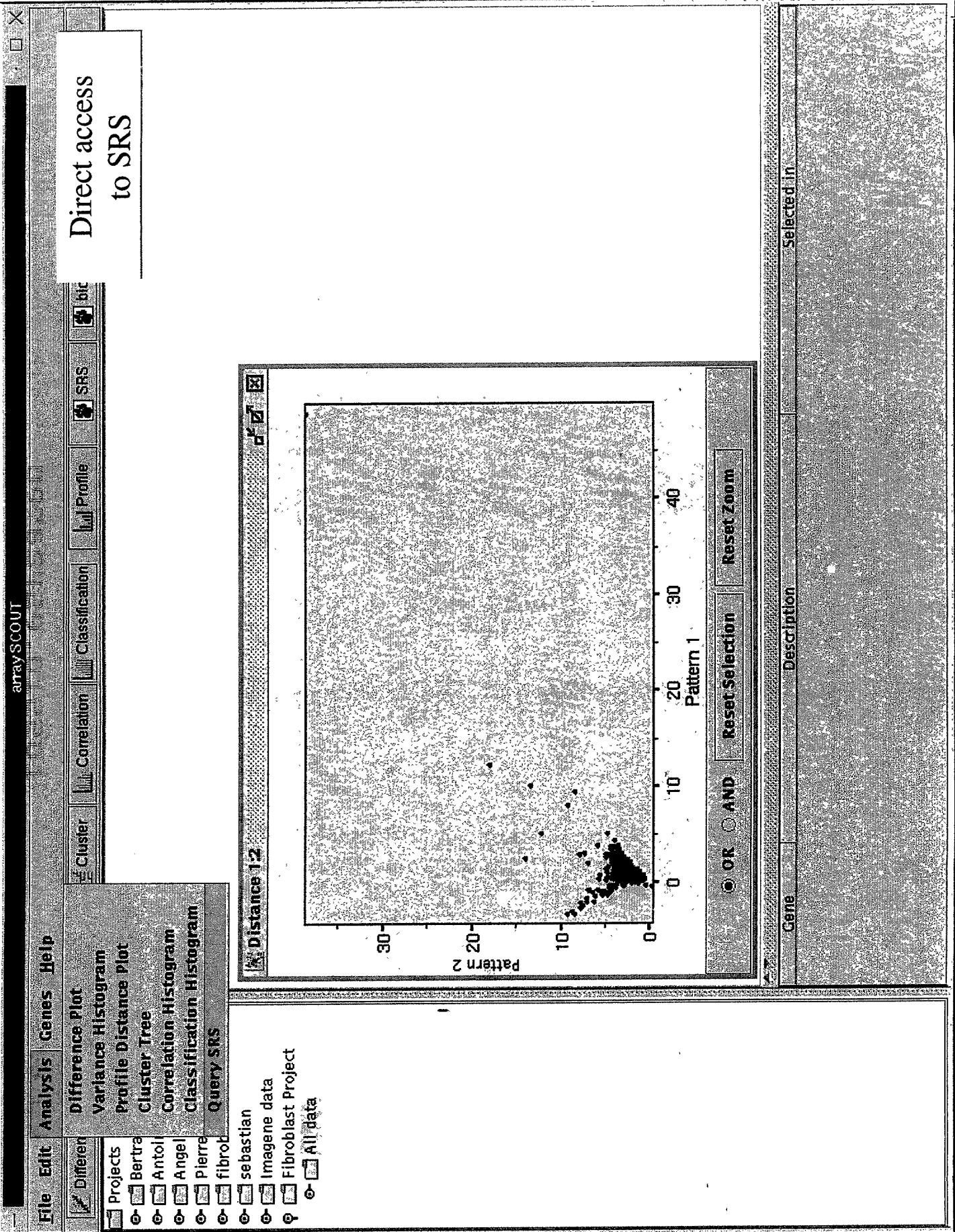


Fig. 76

File Edit Analysis Genes Help

Difference Variance Distance Cluster Correlation Classification SRS Profile SRS

arraySCOUT

SRS

+

-

QT

all dbs

SeqRelated

Protein3DStruct

Sequence

Mutations

TransFac

Mapping

Metabolic Pathways

Others

Simple mode

Submit

Deselected

Stop

Back

Forward

Projects

Bertrand

Antoine

Angela

Pierre

fibroblast data

sebastian

Image data

Fibroblast Project

All data

SRS queries can be easily constructed using this interface

Gene	Description	Selected in
W86798	zh64c06.s1 Soares fetal liver spleen 1NFLS...	Distance 1:2
R21877	yh22c10.s1 Homo sapiens cDNA clone 130...	Distance 1:2
R34833	yh86a04.s1 Homo sapiens cDNA clone 136...	Distance 1:2
H11003	ym07d01.s1 Homo sapiens cDNA clone 47...	Distance 1:2

Fig. 77

arraySCOUT

File Edit Analysis Genes Help

Difference Variance Distance Cluster Correlation Classification Profile SRS bioSCOUT

Projects

- Bertrand
- Antoine
- Angela
- Pierre
- fibroblast data
- sebastian
- Image data
- Fibroblast Project
- All data

SRS

Stop

Simple mode

Submit

Deselect

Q1

SeqRelated

PROSITE

DOMO

PFAMB

PFAMSEED

ENZYME

UNIGENE

UNISEQ

INIEST

PROSITEDOC

PFAM

SWISSPFAM

TAXONOMY

DBEST

RNUNIGENE

RNUNISEQ

RNINIEST

BLOCKS

PFAMA

PFAMHMM

GENETICCODE

DBESTNEW

MMUNIGENE

MMUNISEQ

MMINIEST

Back

Forward

Link to any database

All Entries

SeqCount

SequenceAcc

NID

PID

Clone

Library

End

All Entries

Gene	Description	Selected in
R21877	zh64c06.s1 Soares fetal liver spleen 1NFLS...	Distance 1:2
R34833	yh22c10.s1 Homo sapiens cDNA clone 130...	Distance 1:2
H11003	yh86a04.s1 Homo sapiens cDNA clone 136...	Distance 1:2
	ym07d01.s1 Homo sapiens cDNA clone 47...	Distance 1:2

Fig. 28

File Edit Analysis Genes Help

Difference

Variance

Distance

Cluster

Correlation

Classification

Profile

SRS

bioSCOUT

Projects

Bertrand

Antoine

Angela

Pierre

fibroblast data

sebastian

Image data

Fibroblast Project

All data

SRS

Stop

Simple mode

Submit

Deselcted

Q1 -> Q2

SeqRelated

Protein3DStruct

Sequence

EMBL

GENBANKNEW

PIR

TREMBLNEW

TREMBL

NACENESEQ

EMBLNEW

SWISSPROT

SPTREMBL

GENPEPT

SPTREMBLNEW

GENBANK

SWISSNEW

REMTREMBL

GENPEPTNEW

AAGENESEQ

AllText

cytokine

Back

Forward

Gene	Description	Selected in
W86798	zh64c06.s1 Soares fetal liver spleen 1NFLS...	Distance 1:2
R21877	yh22c10.s1 Homo sapiens cDNA clone 130...	Distance 1:2
R34833	yh86a04.s1 Homo sapiens cDNA clone 136...	Distance 1:2
H11003	ym07d01.s1 Homo sapiens cDNA clone 47...	Distance 1:2

Link again for specific query e.g. cytokine

Fig. 79

Projects

- ☐ Bertrand
- ☐ Antoine
- ☐ Angela
- ☐ Pierre
- ☐ fibroblast data
- ☐ sebastian
- ☐ Image data
- ☐ Fibroblast Project
- ☐ All data

SRS

Stop

Simple mode

Submit

Deselect

Q1 → Q2

- ☐ SeqRelated
- ☐ Protein3DStruct
- ☐ Sequence

- ☐ EMBL
- ☐ GENBANKNEW
- ☐ PIR
- ☐ TREMBLNEW
- ☐ TREMBL
- ☐ EMBL
- ☐ SWISS
- ☐ SPTR
- ☐ GENP
- ☐ SPTR

AllText

Cytokine

Results displayed

Num	Db	ID	Description
1	SWISSPROT	SY02_HUMAN	

[http://bsserver1/srs/bin/cgi-bin/wgetz?-e+\[SWISSPROT-ID:SY02_HUMAN\]](http://bsserver1/srs/bin/cgi-bin/wgetz?-e+[SWISSPROT-ID:SY02_HUMAN])

Back Forward

function subglf(form, addE) { form.elements.length-1];

View

* Complete entries *

SWISSPROT:SY02_HUMAN

ID SY02_HUMAN STANDARD; PRT; 99 AA.
 AC P13500;
 DT 01-JAN-1990 (Rel. 13, Created)
 DT 01-JAN-1990 (Rel. 13, Last sequence update)
 DT 15-JUL-1999 (Rel. 38, Last annotation update)

Gene	Description	Selected in
Y20H1.1.s1	Homo sapiens cDNA clone 67...	SRS
ZH64C06.s1	Soares fetal liver spleen 1NFLS...	Distance 1:2
YH22C10.s1	Homo sapiens cDNA clone 130...	Distance 1:2
YH66A04.s1	Homo sapiens cDNA clone 136...	Distance 1:2
YH07D01.s1	Homo sapiens cDNA clone 47...	Distance 1:2

P16.80

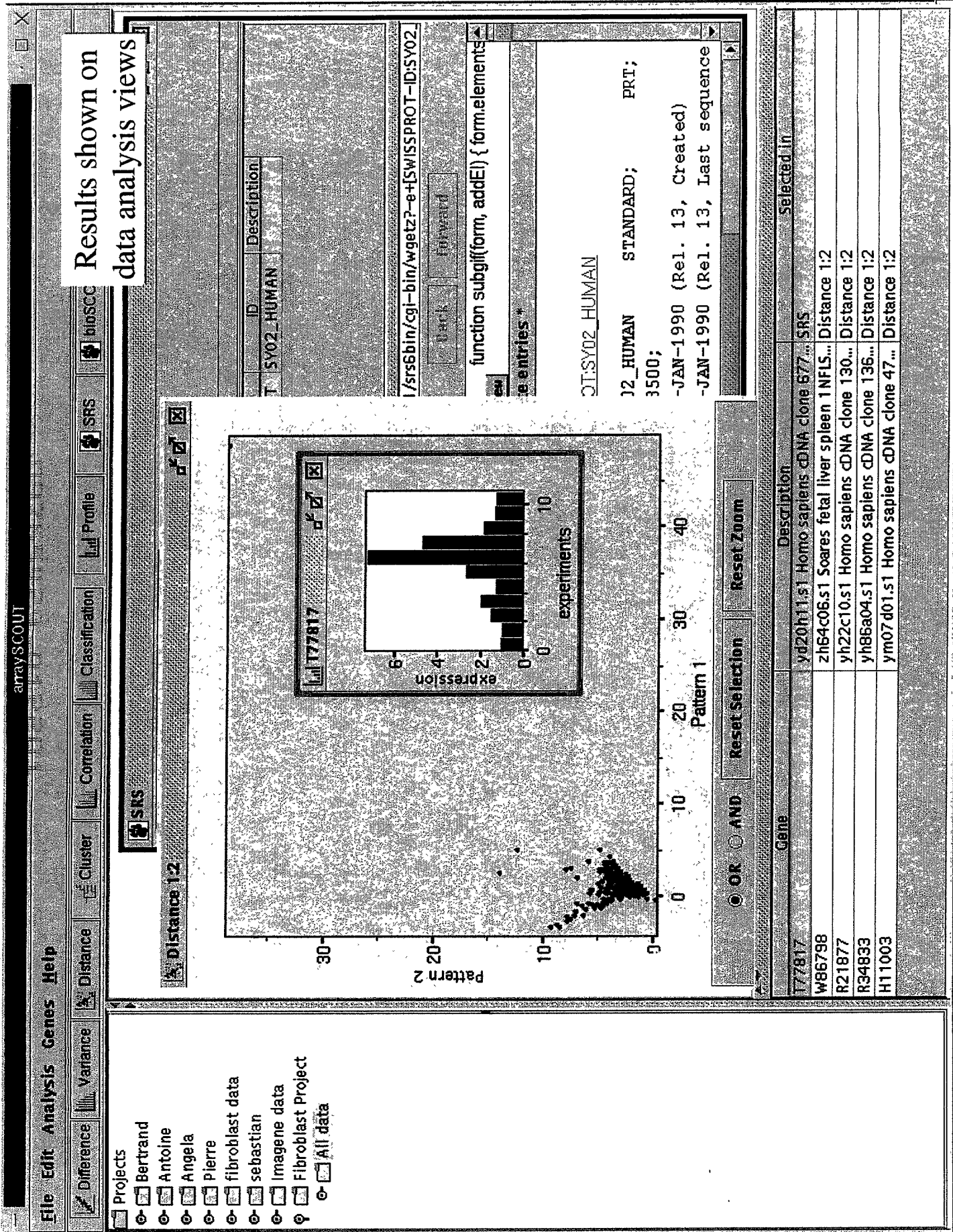


Fig. 81

Link to pathway
information

Projects

- ☐ Bertrand
- ☐ Antoine
- ☐ Angela
- ☐ Pierre
- ☐ fibroblast data
- ☐ sebastian
- ☐ Image data
- ☐ Fibroblast Project
- ☐ All data

SRS

Simple mode
Submit

- ☐ all dbs
- ☐ SeqRelated
- ☐ Protein3DStruct
- ☐ Sequence
- ☐ Mutations
- ☐ TransFac
- ☐ Mapping
- ☐ Metabolic Pathways
- ☐ Others

PATHWAY

LENZYME

Num Db ID Description

1	PATHWAY	map00020	
2	PATHWAY	map00030	
3	PATHWAY	map00220	
4	PATHWAY	map00720	

http://bsserver1/srs6bin/cgi-bin/wget2-e+PATHWAY-ID:map00020

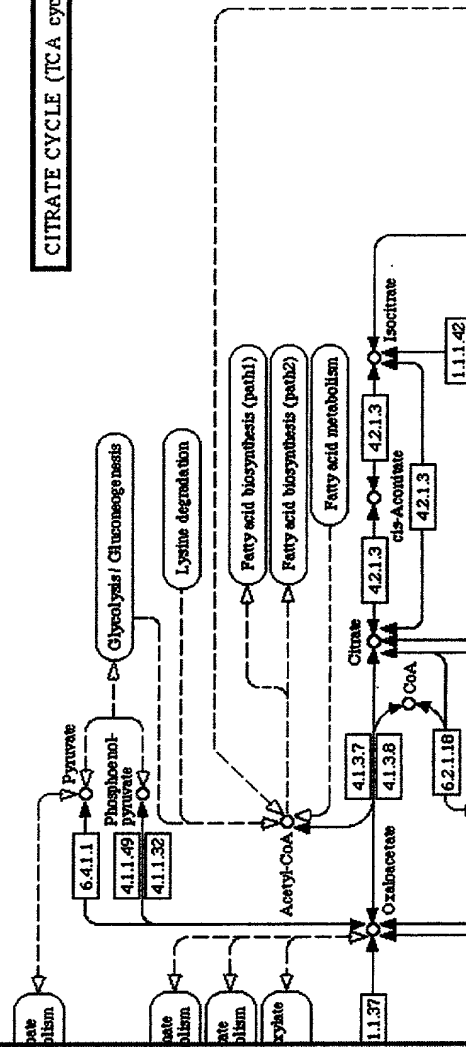
Back Forward

Standard metabolic pathway

way

Enzyme

CITRATE CYCLE (TCA cycle)



Selected in

Gene	Description
W15407	zc18e07.s1 Soares parathyroid tumor NBHPA Homo sapiens cDNA clone 3226... SRS
W86798	zh64c06.s1 Soares fetal liver spleen 1NFLS S1 Homo sapiens cDNA clone 416... Distance 1:2
W84538	zd89b10.s1 Soares fetal heart NBHHTSW Homo sapiens cDNA clone 356635 3' SRS
N35315	yy22c05.s1 Homo sapiens cDNA clone 271976 3' similar to gb:107548 AMIN... SRS
R21877	yh22c10.s1 Homo sapiens cDNA clone 130482 3' Distance 1:2
AA058324	zh67b02.s1 Stragene colon (H937204) Homo sapiens cDNA clone 508643 3' SRS
R34833	yh86a04.s1 Homo sapiens cDNA clone 136590 3' similar to gb:j02931 TISSU... Distance 1:2
H11003	ym07d01.s1 Homo sapiens cDNA clone 47359 3' similar to gb:S56805 ENDO... Distance 1:2

Fig. 83